SERVICE MANUAL

Goodmans

SYSTEM 2780

REMOTE CONTROL STEREO SYSTEM
WITH CD PLAYER AND PLL TUNER

ALBA BUSH harvard HiNARi

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•Save the carton and packing materials: they will be useful if you ever have to transport the unit.

IMPORTANT SAFEGUARDS

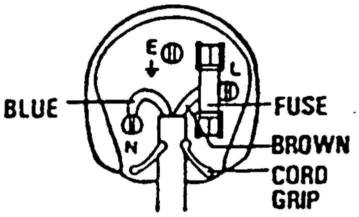
PRE FITTED MAINS PLUGS

For your convenience a mains plug with a fuse has been fitted to this appliance. For your safety please observe the following information.

1. Should the fuse fail in the plug remove the plug from the wall socket and replace the fuse with a 3 Amp ASTA approved to BS1362 fuse.
2. Never use the plug without the fuse cover fitted. Replacement fuse covers are available from your dealer or most electrical retail outlets.
3. If the mains plug is cut off from the cable, rewire the replacement plug in accordance with the instruction given in this manual.
4. CAUTION: Under no circumstances should the discarded plug be inserted into the mains socket. To prevent a shock hazard carefully dispose of the discarded plug. Do not leave the plug lying around where children might see it.

WARNING: To prevent fire or shock hazard do not expose this unit to rain or moisture.

CAUTION: DANGEROUS VOLTAGES EXIST INSIDE THIS UNIT, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DISCONNECT FROM MAINS SUPPLY WHEN NOT IN USE.



MAINS WIRING DETAILS

The wires in this mains lead are coloured in accordance with the following wiring codes:
Blue- - - - - - - - - - - - - - - - - - - Neutral
Brown- - - - - - - - - - - - - - - - - - Live

The wires in this mains lead must be connected to the terminals in the plugs as follows:
Blue Wire- - - - - - - - - - - - - - - N or Black
Brown Wire- - - - - - - - - - - - - - L or Red

Only a 3 Amp fuse should be fitted in the plug or a 5 Amp fuse at the distribution board.

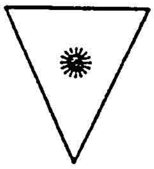
WARNING: UNDER NO CIRCUMSTANCES MUST THE LIVE OR NEUTRAL WIRES BE CONNECTED TO THE EARTH TERMINAL IN A 3-PIN MAINS PLUG.

⧈ This symbol means that this unit is double insulated. An earth connection is not required.

CAUTION: WHEN OPERATING THIS UNIT ON 240V MAINS SUPPLY, PLEASE NOTE THAT WHEN THE POWER SWITCH IS IN THE OFF MODE, THIS DOES NOT DISCONNECT THE UNIT FROM THE MAINS SUPPLY, HOWEVER, PLEASE BE ASSURED THAT IT IS PERFECTLY SAFE TO LEAVE THE UNIT CONNECTED TO THE MAINS SUPPLY.

CAUTION
CLASS 1 LASER PRODUCT
Use of Controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

LASER SAFETY
This unit employs a laser, only qualified service personnel should attempt repair.



DANGER: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCK FAILED OR DEFEATED. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION: HAZARDOUS LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED.

CAUTION
CLEANING: Always disconnect unit from mains supply before attempting to clean it.
Use soft cloth moistened with soapy water, wipe gently.
Do not use solvents or abrasive materials.

SOME DOS AND DON'TS ON THE SAFE USE OF EQUIPMENT

This equipment has been designed and manufactured to meet UK safety standards but like any electrical equipment, care must be taken if you are to obtain the best results and safety is to be assured.

DO read the operation instructions before you attempt to use the equipment.

DO ensure that all electrical connections (including the mains plug, extension leads and interconnections between pieces of equipment are properly made in accordance with the manufacturer's instructions. Switch off and withdraw the mains plug when making or changing connections.

DO consult your dealer if you are ever in doubt the installation, operation, or safety of your equipment.

DO be careful with glass panels or doors on equipment.

DON'T continue to operate the equipment if you are in any doubt about it working normally, or if it is damaged in any way-switch off, withdraw the mains plug and consult your dealer.

DON'T remove any fixed cover as this may expose dangerous voltages.

DON'T leave equipment switched on when it is unattended unless it is specifically stated that it is designed for unattended operation or has a standby mode. Switch off using the switch on the equipment and make sure that your family knows how to do this. Special arrangements may need to be made for infirm or handicapped people.

DON'T listen to headphones at high volume, as such use can permanently damage your hearing.

DON'T obstruct the ventilation of the equipment, for example with curtains or soft furnishings. Overheating will cause damage and shorten the life of the equipment.

DON'T use makeshift stands and never fix legs with wood screws-to ensure complete safety always fit the manufacturer's approved stand or legs with the fixings provided according to the instructions.

DON'T allow electrical equipment to be exposed to rain or moisture.

Above all
- Never let anyone, especially children, push anything into holes, slots or any other opening in the case-this could result in a fatal electric shock.
- Never guess or take chances with electrical equipment of any kind.
- It is better to be safe than sorry!

INTRODUCTION

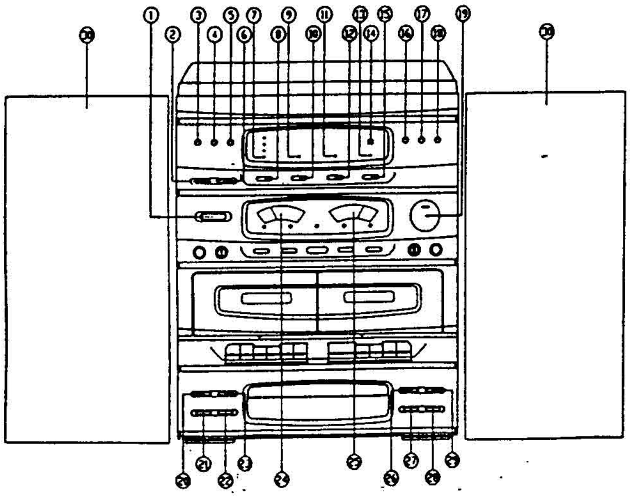
This instruction manual is important to you. Please read it. In a short time it shows exactly how to connect, operate, and adjust this unit for best performance.

It can save you money. It shows simple things to do and check before you call for help can save the cost of unnecessary service or call out charge.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE APPLIANCE TO RAIN OR MOISTURE, DANGEROUS HIGH VOLTAGES ARE PRESENT INSIDE THE ENCLOSURE, DO NOT OPEN THE CABINET, REFER SERVICING TO QUALIFIED PERSONNEL ONLY

CONTROLS IDENTIFICATION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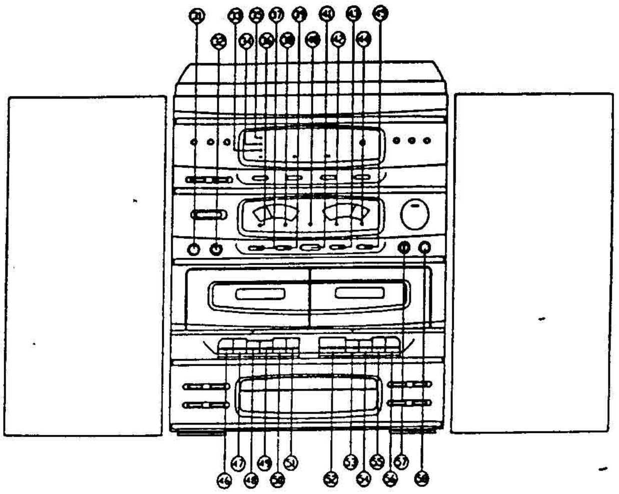
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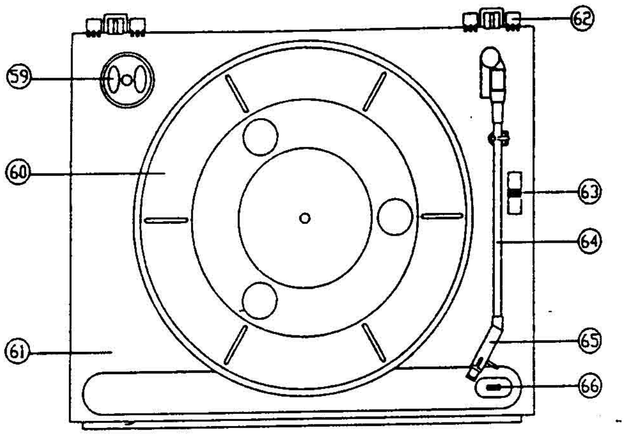
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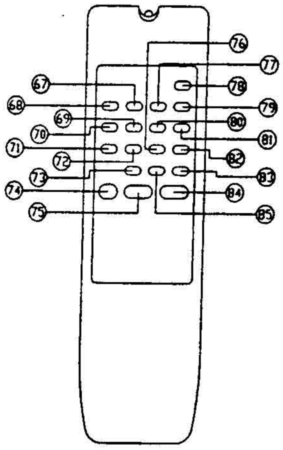
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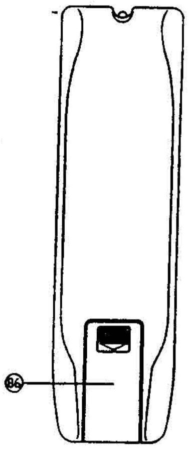

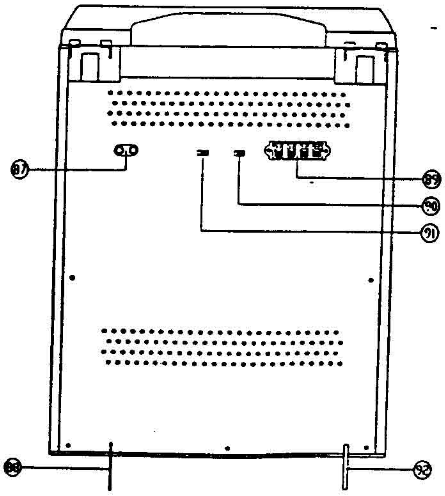
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CONTROLS IDENTIFICATION

1 STANDBY BUTTON
2 TUNING DOWN/HOUR
3 MEMORY SCAN BUTTON
4 MEMORY BUTTON/TIME SET
5 BAND BUTTON
6 TUNING UP/MINUTE
7 TUNER FUNCTION INDICATOR
8 TUNER BUTTON
9 TAPE FUNCTION INDICATOR
10 TAPE BUTTON
11 CD/AUX FUNCTION INDICATOR
12 CD/AUX BUTTON
13 PHONO FUNCTION INDICATOR
14 REMOTE SENSOR
15 PHONO BUTTON
16 MODE BUTTON
17 TIMER BUTTON
18 SLEEP BUTTON
19 VOLUME CONTROL BUTTONS
20 OPEN/CLOSE BUTTON (CD)
21 REPEAT
22 RANDOM
23 PROGRAM BUTTON(CD)
24 LEFT CHANNEL VU METRE
25 RIGHT CHANNEL VU METRE
26 STOP BUTTON (CD)
27 REVERSE SEARCH/SKIP BUTTON (CD)
28 FORWARD SEARCH/SKIP BUTTON (CD)
29 PLAY/PAUSE BUTTON (CD)
30 SPEAKERS
31 HEADPHONES SOCKET
32 BALANCE CONTROL
33 MUTE INDICATOR
34 STANDBY INDICATOR
35 FM STEREO INDICATOR
36 ROCK EFFECT INDICATOR
37 ROCK EFFECT BUTTON
38 CLASSIC EFFECT INDICATOR
39 CLASSIC EFFECT BUTTON
40 EXTRA BASS INDICATOR
41 EXTRA BASS BUTTON
42 POP EFFECT INDICATOR
43 POP EFFECT BUTTON
44 FLAT EFFECT INDICATOR
45 FLAT EFFECT BUTTON
46 RECORD BUTTON (DECK A)
47 PLAY BUTTON (DECK A)
48 REWIND BUTTON (DECK A)
49 FAST FORWARD BUTTON (DECK A)
50 STOP/EJECT BUTTON (DECK A)
51 PAUSE BUTTON (DECK A)
52 PLAY BUTTON (DECK B)
53 REWIND BUTTON (DECK B)
54 FAST FORWARD BUTTON (DECK B)
55 STOP/EJECT BUTTON (DECK B)
56 PAUSE BUTTON (DECK B)
57 MIC LEVEL CONTROL
58 MICROPHONE SOCKET
59 EP ADAPTOR
60 PLATTER
61 TURNTABLE
62 DUST COVER HINGE
63 CUE LEVER
64 TONE ARM LOCK
65 TONE ARM
66 SPEED SELECTOR (33 1/3 OR 45RPM)
67 TAPE
68 TUNER
69 CLASSIC
70 ROCK
71 BAND
72 SHIFT
73 REPEAT (3/8)
74 MUTE
75 VOLUME DOWN BUTTON
76 STOP (1/6)
77 CD/AUX
78 POWER
79 PHONO
80 POP
81 FLAT
82 PLAY/PAUSE (2/7)
83 F.SKIP (5/10)
84 VOLUME UP
85 B.SKIP (4/9)
86 BATTARY DOOR
87 AUX INPUT
88 FM ANT
89 SPEAKER OUTPUT
90 BEAT CUT
91 STEREO MONO/HISIG SPEOD/NORMAL
92 POWER CORD

PRECAUTIONS

Please take good note of the following instructions:

- The unit must be connected to AC 240V only.
- Do not expose to temperature higher than 35°C. Avoid installation near heaters or in areas subject to direct sunlight. Ensure good air circulation.
- Protect the unit from dust, moisture and water.
- Avoid strong magnetic fields, e.g. near TVs or speakers for other units.
- Avoid using strong chemical agents to clean.
- Do not grease or oil components, running mechanisms, etc. The Cassette Decks and CD player are designed to be maintenance free.
- Take the unit to approved service point for servicing.

PREPARATIONS AND CONNECTIONS

PREPARATIONS

1. Carefully unpack the unit. Save all packing material in case the unit ever needs to be returned for servicing or to be transported.
2. Locate the unit horizontally on a heavy duty stand or firm level surface.

CONNECTIONS

Power Cord

Connect the Power Cord to an AC 240V, 50Hz wall outlet.

Ensure that all connections have been made before connecting the Power Cord.

Headphone Socket (PHONES)

Connect stereo headphones with a 6.3mm stereo plug (not included) for monitoring or for private listening. The speakers are automatically disconnected when the headphones are connected to the PHONES Socket.

Auxiliary (AUX) Sockets

Connect the left and right plugs from the auxiliary unit into AUX Sockets on the rear of the unit.

Speaker Connectors

Connect the Speaker wires to the Speaker connectors on the rear of the unit as shown on the right. Only connect the speakers which are supplied with this unit.

NOTE:

Ensure that the polarities of speaker wire, RED(+) and BLACK(-) should be connected to the speaker connector properly.

Microphone Socket

Connect the mic plug into MIC Socket on the unit.

AMPLIFIER- CONTROLS AND FUNCTIONS

POWER switch (POWER)

For switching the unit ON and OFF.

VOLUME control (VOLUME)

Turn this knob clockwise to increase, and counter clockwise to decrease the volume.

DBBS switch

When the DBBS switch is ON, low frequencies will be emphasised at any Volume Control, preset EQ setting.

PRESET EQ buttons

Set the four preset GRAPHIC EQUALISER buttons to adjust the frequency response of your stereo system to match the acoustic characteristics of your listening room and music source.

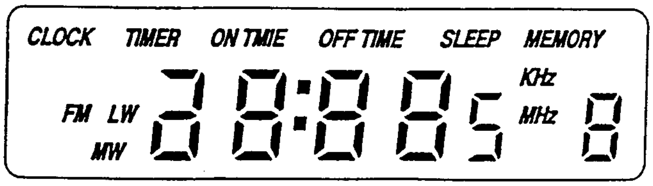
The advantage of the preset EQUALISER over conventional tone controls is that with each of the four controls, it is possible to control the audio frequency response easily.

The frequency response controlled by the four preset EQ buttons have been preset to yield the effect within audio frequency range.

ROCK:	the low frequencies will be strong emphasized and the high frequencies will be emphasized.
CLASSIC:	the low and high frequencies will be emphasized.
POP:	the middle frequencies will be emphasized.
FLAT:	the frequency response will be flat

RADIO OPERATION

This unit features a PLL Synthesized Electronic Digital Tuning System that locks in on the exact frequency of each station and never drifts. In addition, there are 10/5/5 preset station memories in FM/MW/LW so that you can store your favourite stations in each band for immediate recall at the touch of a button.



RADIO RECEPTION

1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select Tuner mode:**
   Set the FUNCTION selector to TUNER.
3. **Select the band:**
   Press the BAND button to select FM/MW/LW band as desired.

MW	For listening to Medium Wave broadcast.
LW	For listening to Long Wave broadcast.
FM	For listening to FM broadcast.

4. **Tune the station:**
   MANUAL TUNING - Press the Tuning UP or DOWN button until you find the desired station.

   AUTO SCAN - Press the Tuning UP or DOWN button, for more them 0.5s the tuner will scan and automatically stop at the next strong station.

   Mono/Stereo switch:
   When a weak-signal FM station is received in stereo, set the MONO/STEREO switch to MONO to improve reception. The STEREO indicator LED will go off.

   NOTE: This unit has 'Last Station Memory'. It remembers the last MW, LW and FM stations selected and automatically returns to those stations when the MW, LW or FM band selector is pressed.

PROGRAMMING PRESET STATION

To enter stations in Tuner Preset positions 1-5:

1. **Tune in the station you wish to programme.**
2. **Press the MEMORY button.**
   The MEMORY indicator appears in the display for 4 seconds.
3. **Select and press the preset button among 1-5 in the remote hand set while the MEMORY indicator is lit.**
   The station is memorised in the preset button you pressed.

To enter stations in Tuner Preset positions 5-10(0)

1. **Follow steps 1 and 2 above.**
2. **Press the SHIFT button and then press preset button 1 or 2 or 3 etc. in the remote hand set. The display will now indicate CH 6 or 7 etc.**
   The station is memorised in the preset button number you have chosen.

NOTE: You must press a preset button whilst the MEMORY indicator is lit or the station will not be accepted. If the memory indicator goes out before you press a preset button, press the MEMORY button again and then press a preset button within 4 seconds.
For preset station 10 of the FM band the LCD display will only show the figure '0'.

RECALLING PRESET STATION

To recall preset stations 1-5, press the corresponding preset button.

To recall preset stations 6-10, press the SHIFT button and then press the corresponding preset button.

NOTE: The unit will maintain preset stations in memory, as long as the unit is plugged into an AC power supply. If the unit is unplugged or the mains power is cut off for more than a few minutes, the preset stations will be lost. They must be entered again when the power is restored.

Helpful Hints:

For FM reception there is a built-in one-metre FM Antenna wire at the rear of the unit. Move the wire around to obtain the best reception.

For MW/LW reception the signals are picked up through the loop antenna. You may have to orient the loop to obtain the best reception.

COMPACT DISC PLAYER OPERATION

The CD(Digital Audio Compact Disc) Player is one of the biggest advances ever made in audio technology. By employing the most sophisticated digital and optical technologies, the Compact Disc Player produces the ultimate in sound reproduction.

The CD player can play a 3" disc without using the disc adaptor.

YOUR COMPACT DISC DESERVES SPECIAL CARE.

CLOSE THE CD DOOR WHEN NOT IN USE.

There is a precision-made focusing lens in the CD COMPARTMENT which cannot be seen from the outside. Always close the CD DOOR when not using the player to protect this lens from dirt and dust. NEVER TRY TO TOUCH THIS LENS.

IMPORTANT: MOISTURE CONDENSATION

Moisture is often seen as water built-up on the inside of the windows in a warm room on a cold winter day. Moisture can also form inside the player in a similar manner in the following cases:

- Immediately after a heater has been turned on.
- In a steamy or very humid room.
- When the unit is suddenly moved from a cold environment to a warm moist one, for example, in moving a unit from a cool air conditioned room to an outside porch on a humid summer day.

If moisture forms inside this player, it may not operate properly. To correct this problem, turn off the power and wait about 20 to 30 minutes for the moisture to evaporate.

CONTROLS AND FUNCTIONS

DOOR OPEN / CLOSE △ Button

Press to open the Disc Compartment Door. Press again to close it.

PLAY / PAUSE Button

Press once to play. Press again during play to pause the current track. Press again to resume playing at the same point.

STOP ■ Button

Press to stop CD playback.

SKIP ⏮ / ⏭ buttons

Press the ⏭ (Forward) button *momentarily* to advance the track number or jump to the beginning of the next track. Press the ⏮ (Backward) button *momentarily* to lower the track number or jump to the beginning of the previous track.

To quickly locate a desired passage whilst playing a disc, press and hold the ⏭ (Forward) button. You will hear the disc as it rapidly searches forward through the disc.

Press and hold the ⏮ (Backward) button to search backwards through the disc.

When you find the desired passage, release the button and normal play will resume.

REPEAT Button

Press once: REPEAT ONE

The current track is played repeatedly.

The REPEAT 1 indicator will appear in the display.

Press twice: REPEAT ALL

The whole CD or programmed track sequence is played repeatedly.

The REPEAT 1 ALL indicator will appear in the display.

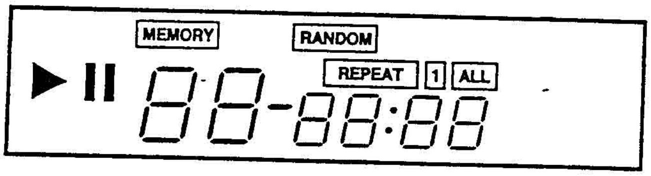
RANDOM Button

Press to play all tracks in a random sequence. The Random Play will automatically stop after all tracks have been played.

Press again to cancel.

PROGRAM Button

Use this feature to programme a track sequence of your choice. (Refer to PROGRAMMED PLAY.)



CD Compartment

Place the compact disc on the disc compartment with the label side facing upwards.

NOTE: Only the non-label side of the disc is actually played.

OPERATING THE COMPACT DISC PLAYER

Loading - Open the Disc Compartment Door by pressing the OPEN/CLOSE button. Take the disc out of its holder and place it in the compartment with the label side upwards. Then close the door.

Unloading - After stopping play, press the OPEN/CLOSE button to open the door. Remove the disc out of the compartment and put it back into its holder.

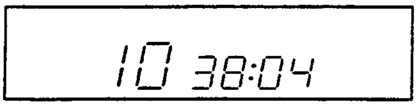
Always close the Disc Compartment Door, when not in use, to keep out dust.

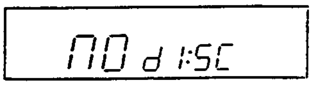
DO NOT LEAVE THE DISC IN THE UNIT WHEN NOT IN USE.

PLAYING THE DISC

1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select CD mode:**
   Press the CD/AUX button to select CD section.
3. **Load the CD:**
   Press the OPEN/CLOSE button to open the CD DOOR. Place the disc in the compartment and press the OPEN/CLOSE button.
   The total number of tracks and total playing time on the disc will be displayed.

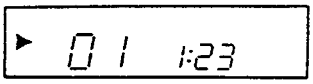
e.g.



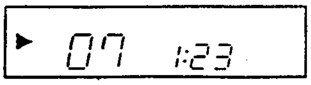


If the display on the right is shown after a disc is placed in the compartment, check whether a disc is placed correctly (the label facing upwards).

4. **Start playback:**
   From the first track:
   Press the PLAY/PAUSE button to start playing the disc from first track.

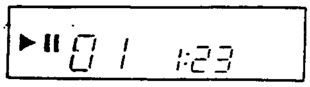


From any specific track:
Press the SKIP |◀◀ or ▶▶| button to select your desired track being played at the beginning and press the PLAY/PAUSE button to start playing.



When the last track has finished the disc will stop automatically.

5. **Suspend playback:**
   Press the PLAY/PAUSE twice momentarily suspend playback.
   Press the PLAY/PAUSE button again to resume playback.



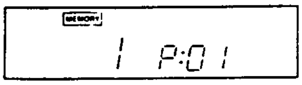
6. **Stop playback:**
   To stop playing at any time, press the STOP □ button

PROGRAMMED PLAY

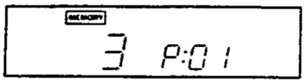
The programming feature on the system enables you to play a maximum of 35 tracks in asequence of your choice.

Programming track swquence:

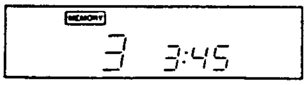
1. **Load the disc in the disc compartment.**
2. **Programme the first track:**
   Press the PROGRAM button.



Press the SKIP |◀◀ or ▶▶| button to select the first track (e.g., track number 3).



Press the PROGRAM button again. The first track is programmed.



3. **Programme the next track:**
   Press the SKIP |◀◀ or ▶▶| button. Then press the PROGRAM button once more to programme.
4. **Programme up to 35 tracks:**
   Continue this process up to a maximum of 35 tracks as desired. To check the programme you stored after complete programming, press the PROGRAM button repeatedly to check next programs.

Playback of the programmed track sequence:
Press the PLAY/PAUSE button to start the programme play. To stop play press the STOP ■ button.

Erasing the programmed track sequence:
Press the STOP ■ button twice in the STOP mode, turn the unit off, open the CD DOOR or change to TUNER, TAPE, or PHONO will erase all programmed presets.

PRECAUTIONS

TAPE PRECAUTIONS

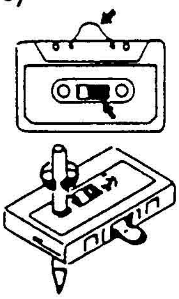
Recommended Cassette Tapes

In order to obtain optimum performance with the built-in cassette tape deck, it is essential to use only high quality cassette tapes. The bias and equalisation of this tape deck is adjusted to yield excellent results if used with brand name tapes.

Use C-30, C-60 and C-90 cassette tapes only, We do not recommend the C-120 cassette because they can be subject to mechanical instability and proper, constant tape tension cannot be controlled.

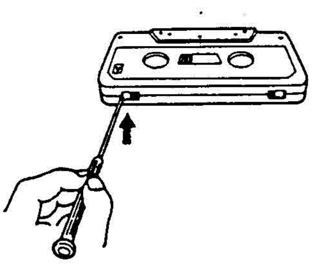
Checking the Cassette (Slack Tape)

Make sure that the cassette tape has no slack prior to inserting it into the cassette compartment. Unless the tape is taut, it may wind around the had mechanism and trouble may result. Use a pencil as shown to take up slack on one of the reels.

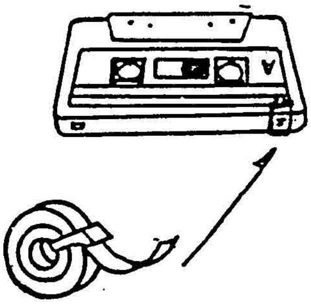


Record Button Interlock - Accidental Erasure Protection

Remove the tab as illustrated so that the record mode does not function when the record button is pressed.



To record on a cassette once tabs have been removed, simply cover the slot with plastic tape.



CONTROLS AND FUNCTIONS

Cassette Deck A (RECORD/PLAYBACK)
For recording and playback.

Cassette Deck B (PLAYBACK)
For playback only.

PLAY ▶ button
Press the PLAY ▶ button to start playback.

RECORD ● (Tape A) button
Press the RECORD ● button to start recording.

FAST-FORWARD (F.FWD ▶▶) button
For fast winding the tape, press the F.FWD ▶▶ button Press the STOP/EJECT button when the desired location has been reached. When the end of the tape has been reached, the tape will stop automatically.

REWIND (REW ◀◀) button
For rewinding the tape, press the REWIND ◀◀ button. Press the STOP/EJECT button when the desired location has been reached. When the beginning of the tape has been reached, the tape will stop automatically.

STOP/EJECT ■ / ▲ button
Press the STOP/EJECT ■ / ▲ button to open the cassette compartment door or stop playback or recording.

PAUSE ❚❚ button
Press the PAUSE ❚❚ button to momentarily suspend tape travel during recording or playback. Press the PAUSE ❚❚ button again and recording or playback will resume. The PAUSE control does not function during fast forward rewind.

BEAT CUT switch
To eliminate "WHISTLE" noise during MW/LW tape recording, push this switch to change either "1" or "2" position.

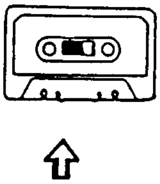
HIGH SPEED DUBBING/MONO/ST switch
Set as marked for dubbing speed selection or for FM mono/stereo selection.

CONTROLS AND FUNCTIONS

Inserting a Cassette Tape

To insert a cassette tape into TAPE A or B.

1. **Open the cassette door:**
   Press the STOP/EJECT ■ / ▲ button to open the cassette door.
2. **Insert the cassette:**
   Insert the cassette with the tape side facing downwards and the side which you wish to play or record facing you.



3. **Close the cassette door:**
   Press gently on the top centre of the door.
   Do not use force.

To remove a tape, press the STOP/EJECT ■ / ▲ button and remove the tape.

PLAYBACK

Playback (TAPE A and TAPE B)

Tape A is used for both recording and playback. Tape B is playback only.

1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select Tape mode:**
   Set the FUNCTION selector to TAPE.
3. **Insert the cassette:**
   Open the cassette deck with the STOP/EJECT ■ / ▲ button.
   Insert a recorded cassette into the Deck A or B.
   Set the TAPE SELECT switch according to the type of tape being used.
4. **Start playback:**
   Press the PLAY ► button to start playback.
5. **Rewind or fast forward:**
   For fast winding or rewinding the tape, press the F. FWD ►► or REW ◄◄ button. Press the STOP/EJECT ■ / ▲ button when the desired location has been reached.
6. **Suspend playback:**
   Press the PAUSE ❙❙ button to momentarily suspend playback.
   Press again to resume playback.
7. **Stop playback:**
   Press the STOP/EJECT ■ / ▲ button to stop playback at any time. The tape will automatically stop at the end of the tape.

Sequential Playback (From TAPE B to TAPE A)

This unit enables you to play sequentially from Tape B to Tape A.

1. **and 2.:See left.**
3. **Insert cassettes:**
   Insert prerecorded tapes into Tape A and Tape B compartments.
4. **Start deck B.**
   Press the PLAY ► button on Tape B to start playback.
5. **Set deck A.**
   Press the PAUSE ❙❙ and PLAY ► button on Tape A. Tape B automatically stops at the end of the tape and Tape A will start.

RECORDING (TAPE A)

Recording from Radio

1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select Radio mode:**
   Set the FUNCTION selector to TUNER and tune your desired station.
3. **Insert cassette:**
   Open the cassette deck with the STOP/EJECT ■ / ▲ button.
   Insert a cassette into the Deck A.
4. **Start recording:**
   Press the RECORD ● button to start recording.
   The RECORD indicator lights up.
5. **Suspend or stand by recording:**
   Press the PAUSE ❙❙ button to momentarily suspend recording.
   Press again to resume recording.
6. **Stop recording:**
   Press the STOP/EJECT ■ / ▲ button to stop recording at any time. The tape will automatically stop at the end of the tape.

NOTE: Occasionally when recording from MW or LW, unwanted "BEAT" signal and noise can be heard. To eliminate this noise, push the HIGH SPEED DUBBING-BEAT CUT switch to change either "1" or "2" position.

Recording from CD

1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select CD mode:**
   Set the FUNCTION selector to CD.
3. **Select the track on the CD to be recorded.**
   Insert the CD into the CD compartment. Press the SKIP ⏮ / ⏭ button to select the desired track you wish to record from.

   To record from any position on the track:
   Press the PLAY ▶ button to start playback on the CD player. Press the PLAY button again when reaching the desired position you wish to record from.
4. **Press the RECORD ● button.**
   Press PLAY button again. Recording starts after the RECORD ● button is pressed. The CD player then automatically starts playing the selected track.
5. **Stop recording:**
   Press the STOP/EJECT ■ / ▲ button to stop recording at any time. The tape will automatically stop at the end of the tape.

Dubbing (From TAPE B to TAPE A)

This unit enables you to duplicate a prerecorded tape onto another tape by using the built-in double deck mechanisms. It is performed only one way, from Tape B (playback) to Tape A (recording).

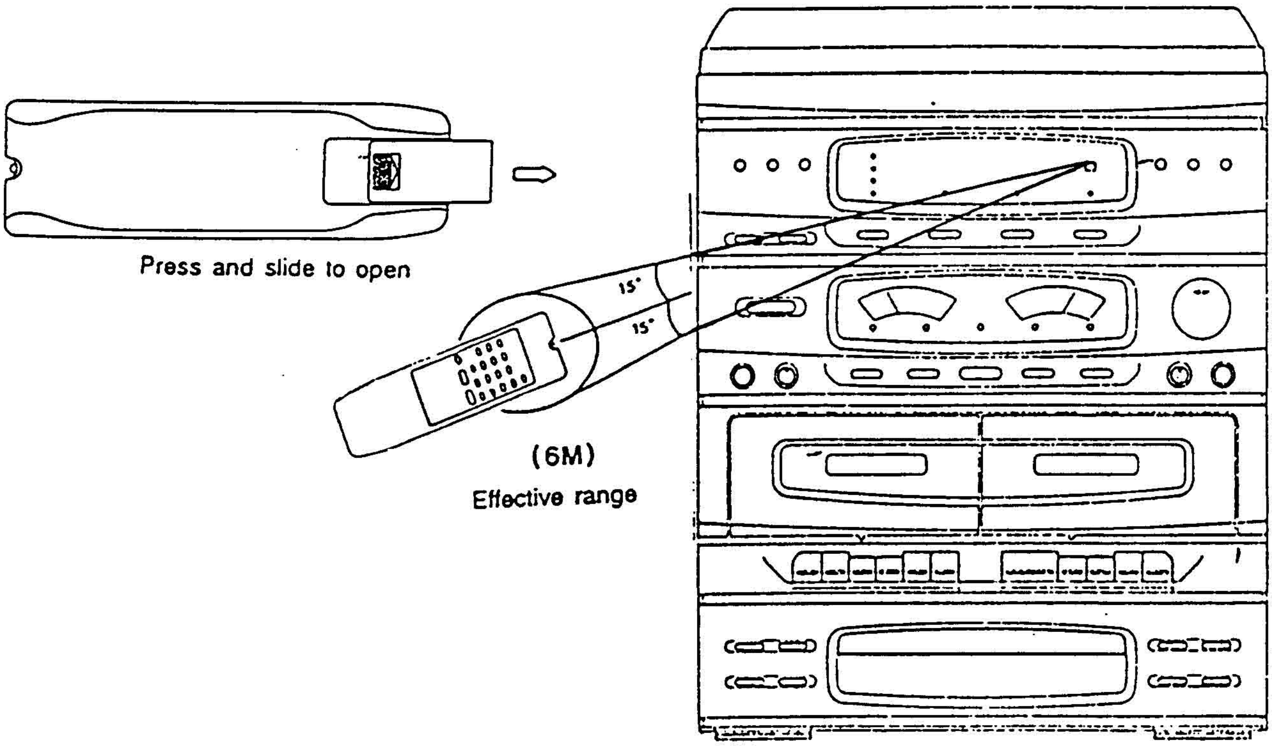
1. **Switch the unit on:**
   Press the POWER switch to ON.
2. **Select Tape mode:**
   Set the FUNCTION selector to TAPE.
3. **Insert the cassette:**
   Open both cassette decks with the STOP/EJECT ■ / ▲ buttons.
   Insert a recorded cassette into the Deck Band a blank cassette into the Deck A.
4. **Recording standby:**
   Press the PAUSE ❚❚ button and then RECORD ● button on Deck A. The RECORD indicator lights on.
5. **Select dubbing speed:**

Normal speed:	DUBBING SW NORMAL
High speed:	DUBBING SW HIGH

6. **Start dubbing:**
   Press the PLAY ▶ button on Deck B.
   The PAUSE ❚❚ button on Deck A is automatically released and dubbing starts.
7. **Stop dubbing:**
   Both decks automatically stop at the end of the tape. If you wish to stop beforehand, press the STOP/EJECT ■ / ▲ buttons on both decks at any time.

NOTE: Do not change the DUBBING SPEED during dubbing as this would ruin the recording.

REMOTE CONTROL OPERATION



INSTALLING BATTERIES

Install two R03 (AAA or UM-4) size batteries into the battery compartment of the Remote Controller.

BATTERY REPLACEMENT

When batteries become weak, the operating distance of the Remote Controller is greatly reduced and you will need to replace the batteries.

USING THE REMOTE CONTROLLER CORRECTLY

- Point the Remote Controller at the REMOTE SENSOR located to the left of the volume control.
- The function of the buttons is the same as the corresponding control on the main unit but some have a dual function depending on if CD or radio is being used.
- when there is a strong ambient light source, the performance of the infrared REMOTE SENSOR may be degraded, causing unreliable operation.
- The recommended effective distance for remote operation is about 6 metres (19 feet).

NOTE:

If the Remote Controller is not to be used for a long time, remove the batteries to prevent possible damage through battery.

Do not mix different types of battery, or old batteries with new ones.

CARE AND MAINTENANCE

POWER SWITCH

After using the unit, turn off the power by pressing the POWER switch.

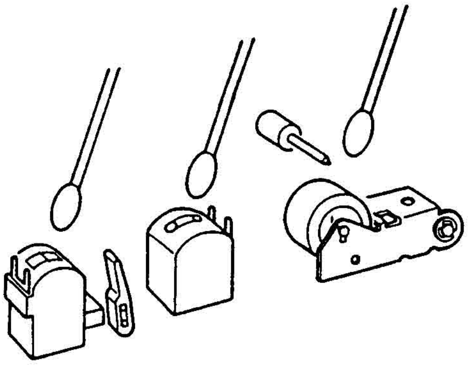
CLEANING THE UNIT (REMOVE MAINS PLUG FROM MAINS OUTLET SOCKET)

To clean the unit, simply wipe with a soft clean cloth moistened with plain lukewarm water.

CLEANING THE TAPE HEAD

To ensure the continued high oerformance of your unit, periodically clean the heads and pinch roller to prevent accumulation of dust or tape oxide deposits by using a special tape head cleaning cassette, available at record and tape stores everywhere. Failure to clean these parts may resuit in inferior sound quality,distortion of recorded sound, deterioration of reproduction of high frequencies, and inconsistent tape speed.

1. Open both cassette compartment doors by pressing both STOP/EJECT ■ / ▲ button.
2. Moisten a cotton swab with head cleaner or isopropyl alcohol and apply to the faces of heads, rubbing gently until all traces of dirt or oxide are removed. Clean the surfaces of the pinch rollers and capstans also.
3. Dry the heads with another swab.



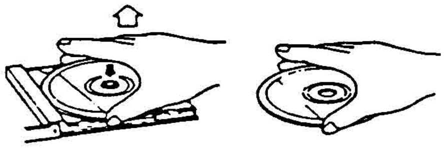
CAUTION:

1. Screwdrivers and other metal objects should NEVER be allowed to come in contant with the tape heads. These will scratch the sensitive surface causing damage to your tapes.
2. Magnets or magnetised objects should not be placed near tape heads.

COMPACT DISC

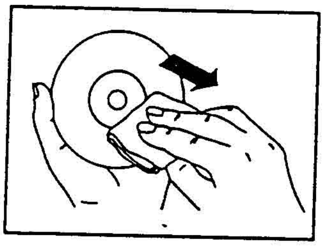
Handling the disc

Although the music tracks in the disc are covered with a protective layer, it is still advisable to treat the disc carefully. Ensure that you always pick up discs by the edge, and put them back in their holders immediately after use.



Cleaning the disc

Cleaning will not normally be necessary. However, should fingerprints, dust or dirt appear, you can wipe them off with a soft, lint-free cloth. Wipe the disc in a straight line from centre to edge. You can moisten the disc first if necessary but detergent or abrasive cleaning agents must never used, nor cleaning agents for conventional records.



COMPACT DISC PLAYER

The player mechanism is fitted with self-lubricating bearings and must not be oiled or greased.

TROUBLESHOOTING GUIDE

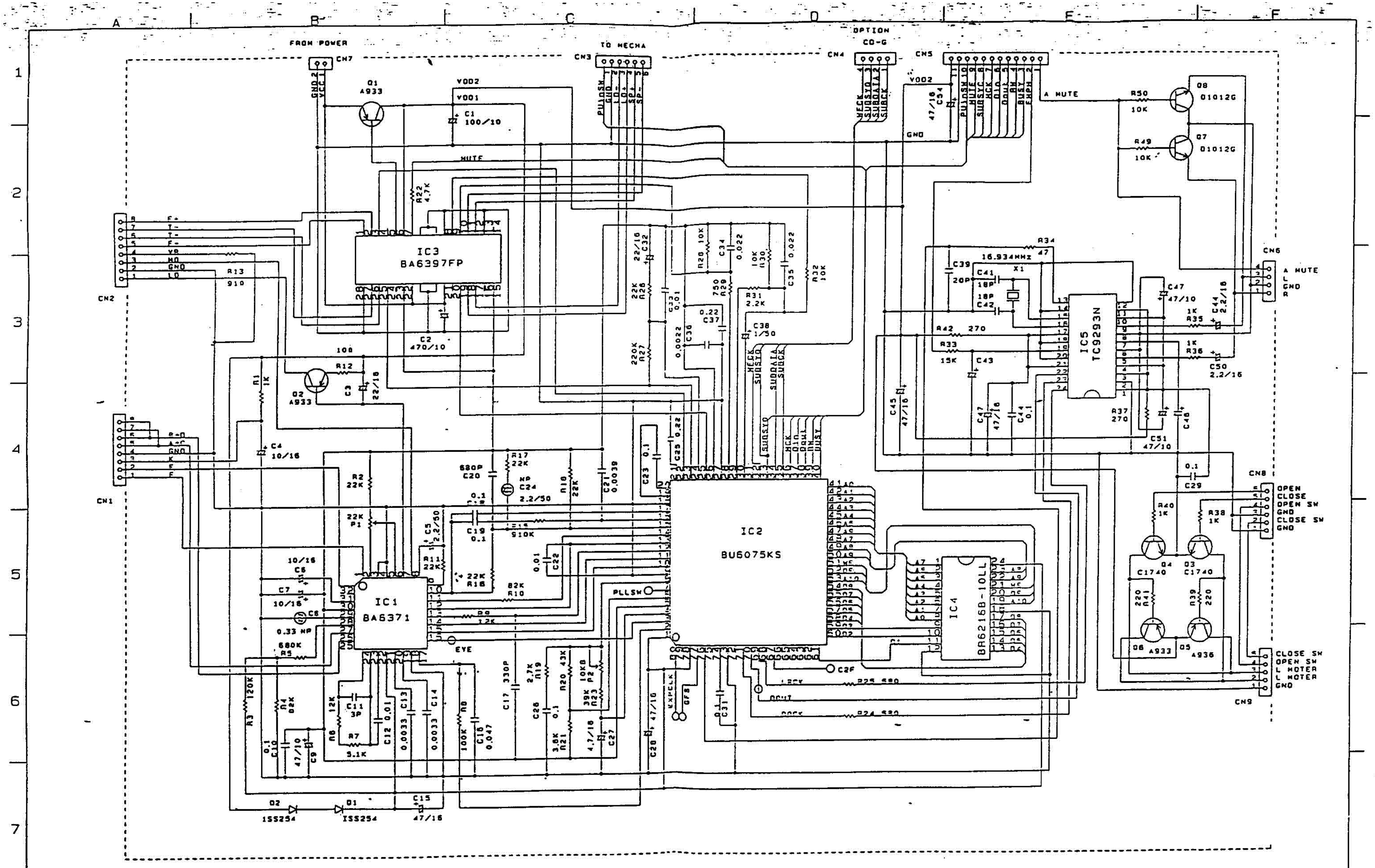
Please check the following items before contacting your dealer or returning the unit for repair

Problem	PossidieCause	Remedy
GENERAL No sound	MUTE function is ON.	Press MUTE button on Remote Control unit.
	Speakers are not connected.	Check speaker connections.
	Power is on.	Push power switch on.
	Mains cord is not plugged in.	Plug in mains cord.
	VOLUME control is at its minimum position.	Set the VOLUME control to a proper sound level
	Stereo headphones plug inserted into PHONES socket.	Pull out headphones plug from PHONES socket.
RADIO Noise in radio reception	Location and direction of unit is not appropriate. (LW/MW ONLY)	Rotate or reposition unit.
	Station has not been tuned properly.	Tune to correct frequency.
	FM Antenna was tied.	Untie the FM Antenna and extend it.
CASSETTE DECKS Unsteady tape sound	Dirty capstan.	Clean capstan.
	Irregular cassette tape winding.	Replace tape.
Cannot record	Cassette's erasure prevention tabs broken out.	Replace tape or cover tab openings with adhesive tape.
Recorded tape sound is distorted	Dirty head.	Clean head.
	Faulty cassette tape.	Replace tape.
High frequency of tape sound is weak	Dirty head.	Clean head.
	Tape select switch set improperly.	Set for type of tape being used.
REMOTE CONTROL Remote control unit does not function	Batteries are incorrectly placed.	Check battery polarities.
	Batteries are weak or dead.	Replace them with new batteries.
	There is an obstruction between the remote control unit and the main unit.	Remove the obstruction.
	The remote control unit is not correctly facing the main unit.	Aim the remote control unit toward the main unit
CD PLAYER Disc is inserted but number of tracks and playing time are not displayed.	Disc is inserted upside down.	Insert disc correctly.
	Disc is dirty.	Wipe clean with soft cloth.
	Disc is scratched.	Use a new disc.
	Disc is seriously warped.	Use a new disc.
	A non-standard disc is inserted.	Use only brand name discs.
	Moisture has formed inside the CD deck.	Wait about 20 to 30 minutes.
Certain sections of a disc are not played normally.	Disc is dirty.	Wipe clean with soft cloth.
	Disc is scratched.	Play disc and skip over scratched sections (if so desired), otherwise, replace disc.

SPECIFICATIONS

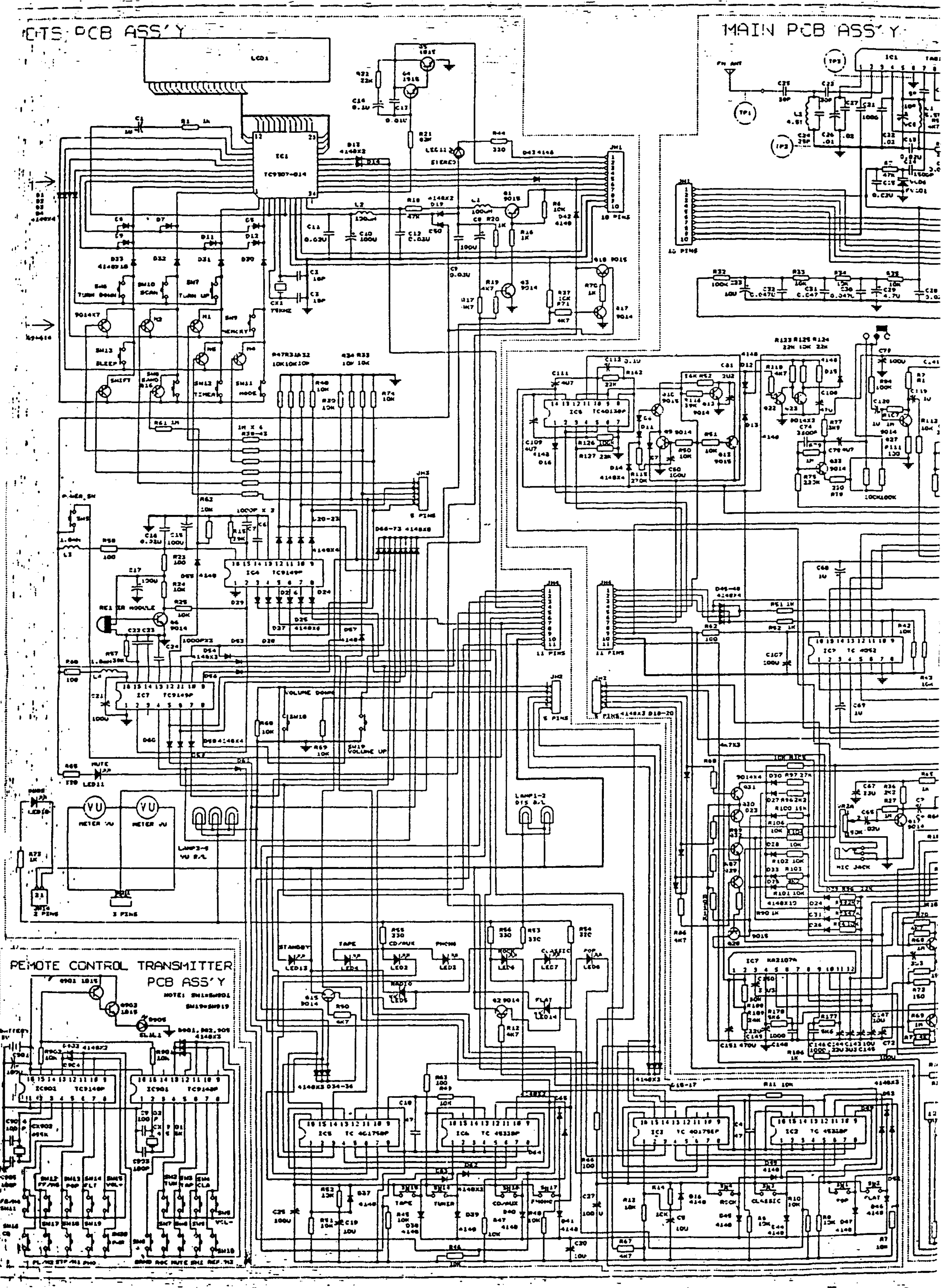
TUNER SECTION	
RADIO FREQUENCY RANGE	
LW	146-281 kHz
MW	531-1602 MHz
FM	87.5-108 MHz
NUMBER OF PRESET STATIONS	FM/MW/LW 10/5/5
AUDIO SECTION	
POWER OUTPUT	7 WATTS RMS PER CHANNEL INTO 8Ω AT 10% THD (EIAJ) 70 WATTS PMPO
SPEAKER IMPEDANCE	8Ω
CD PLAYER SECTION	
FREQUENCY RESPONSE	50 Hz - 15 kHz (+1/−3dB)
SIGNAL-TO-NOISE RATIO	55 dB
WOW AND FLUTTER	BELOW MEASURABLE LIMITS
D-A CONVERSION	1 bit
NUMBER OF PROGRAMMES	35 PROGRAMMES
SAMPLING SYSTEM	8 TIMES SAMPLING
CASSETTE DECK SECTION	
WOW AND FLUTTER	0.35% (WRMS)
FREQUENCY RESPONSE	125 Hz - 8 kHz (+/- 3 dB)
TAPE SPEED	4.75 cm/sec.
POWER SUPPLY	MAIN UNIT AC 240V, 50Hz REMOTE CONTROL DC. 3V - 2X "AAA" SIZE/UM-4

As our products are subject to continuous improvement, we reserve the right to modify product designs and specification without notice and without incurring any obligation.

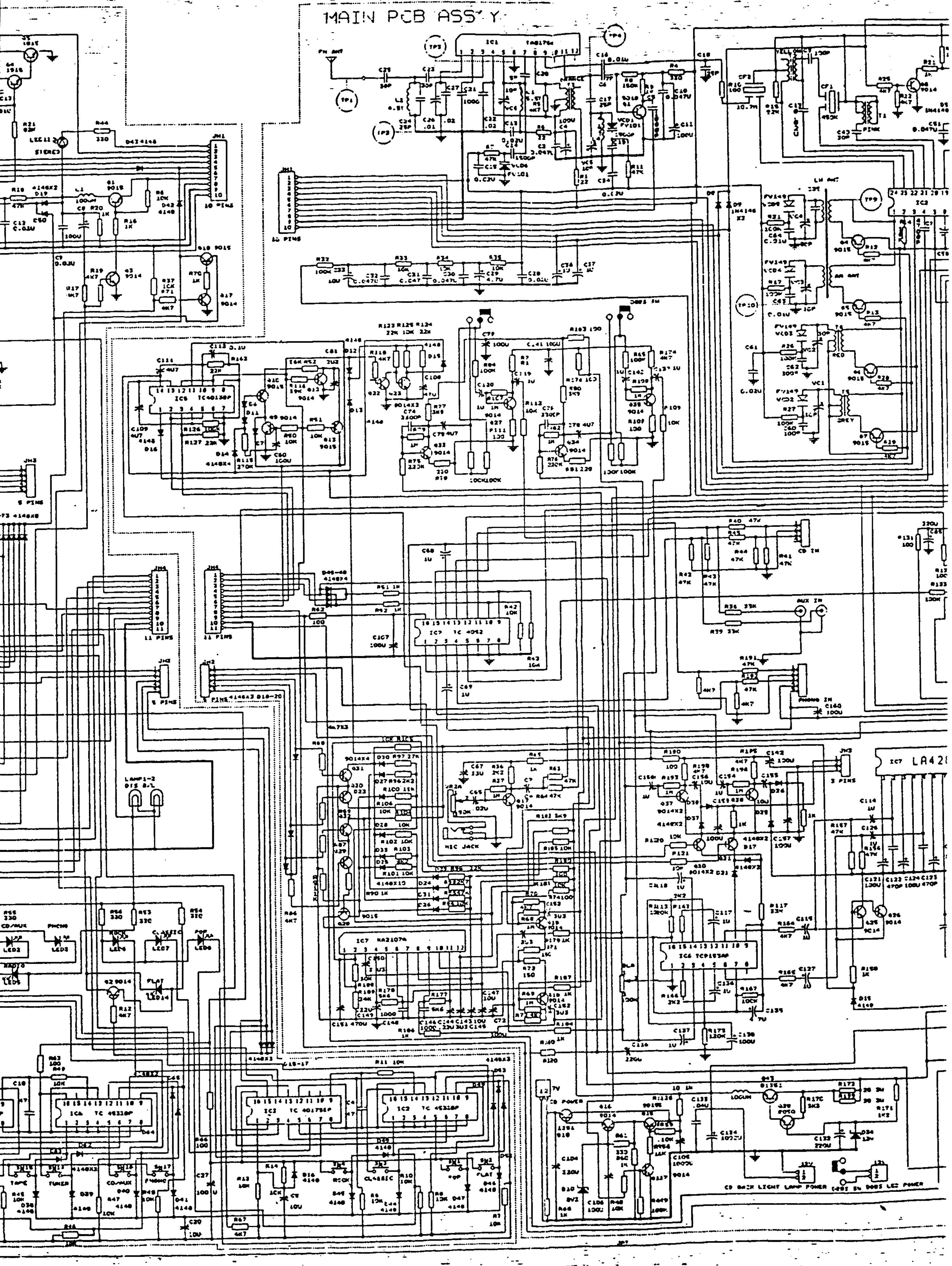

A
B
C
D
E
F
1
2
3
4
5
6
7
FROM POWER
CN7
GND 2
VCC 1
TO MECHA
CN3
PUinSW
GND
LD-
LD+
SP+
SP-
OPTION
CD-G
CN4
MECK
SUBSYO
SUBDATA
SUBCK
CN5
VDD2
GND
PUinSW
MUTE
SUBSYC
MCK
DIO
DOW
AW
BUSY
EMPH
A MUTE
Q1
A933
VDD2
VDD1
C1
100/10
MUTE
R22
4.7K
IC3
BA6397FP
C2
470/10
CN2
F+
T-
T+
F-
VR
MD
GND
LD
R13
910
100
R12
Q2
A933
C3
22/18
R1
1K
C4
10/16
CN1
R50
10K
Q8
DI012G
R49
10K
Q7
DI012G
CN6
A MUTE
L
GND
R
R34
47
16.934MHz
X1
C39
20P
C41
18P
C42
18P
R42
270
R33
15K
C43
C45
47/16
C47
47/16
C44
0.1
IC5
TC9293N
C47
47/10
R35
1K
C44
2.2/16
R36
1K
C50
2.2/16
R37
270
C51
47/10
C48
C29
0.1
CN8
OPEN
CLOSE
OPEN SW
GND
CLOSE SW
GND
R40
1K
R38
1K
Q4
C1740
Q3
C1740
R41
220
R39
220
Q6
A933
Q5
A936
CN9
CLOSE SW
OPEN SW
L MOTER
L MOTER
GND
C32
22/16
R26
22K
R27
220K
C33
0.01
C36
0.0022
R28
10K
C34
0.022
R30
10K
C35
0.022
R32
10K
R29
750
R31
2.2K
C37
0.22
C38
1/50
MECK
SUBSYO
SUBDATA
SUBCK
C23
0.1
C25
0.22
C21
0.0039
IC2
BU6075KS
IC4
BA6216B-10LL
PLLSW
C2F
LRCK
R25
580
BCLK
R24
580
DOUT
EXPCLK
GF8
C31
0.1
C28
47/10
R2
22K
680P
C20
R17
22K
NP
C24
2.2/50
R18
22K
0.1
C19
0.1
510K
P1
22K
C5
2.2/50
R11
22K
R16
22K
C22
0.01
R10
82K
R9
12K
IC1
BA6371
C6
10/16
C7
10/16
C8
0.33 NP
R5
680K
EYE
R3
120K
R4
82K
C10
0.1
C9
47/10
C11
3P
12K
R6
R7
5.1K
C12
0.01
C13
0.0033
C14
0.0033
R8
100K
C16
0.047
C17
330P
R19
2.7K
C26
0.1
R20
43K
R21
3.6K
P2
10K8
R23
39K
C27
4.7/16
D2
1SS254
D1
1SS254
C15
47/16

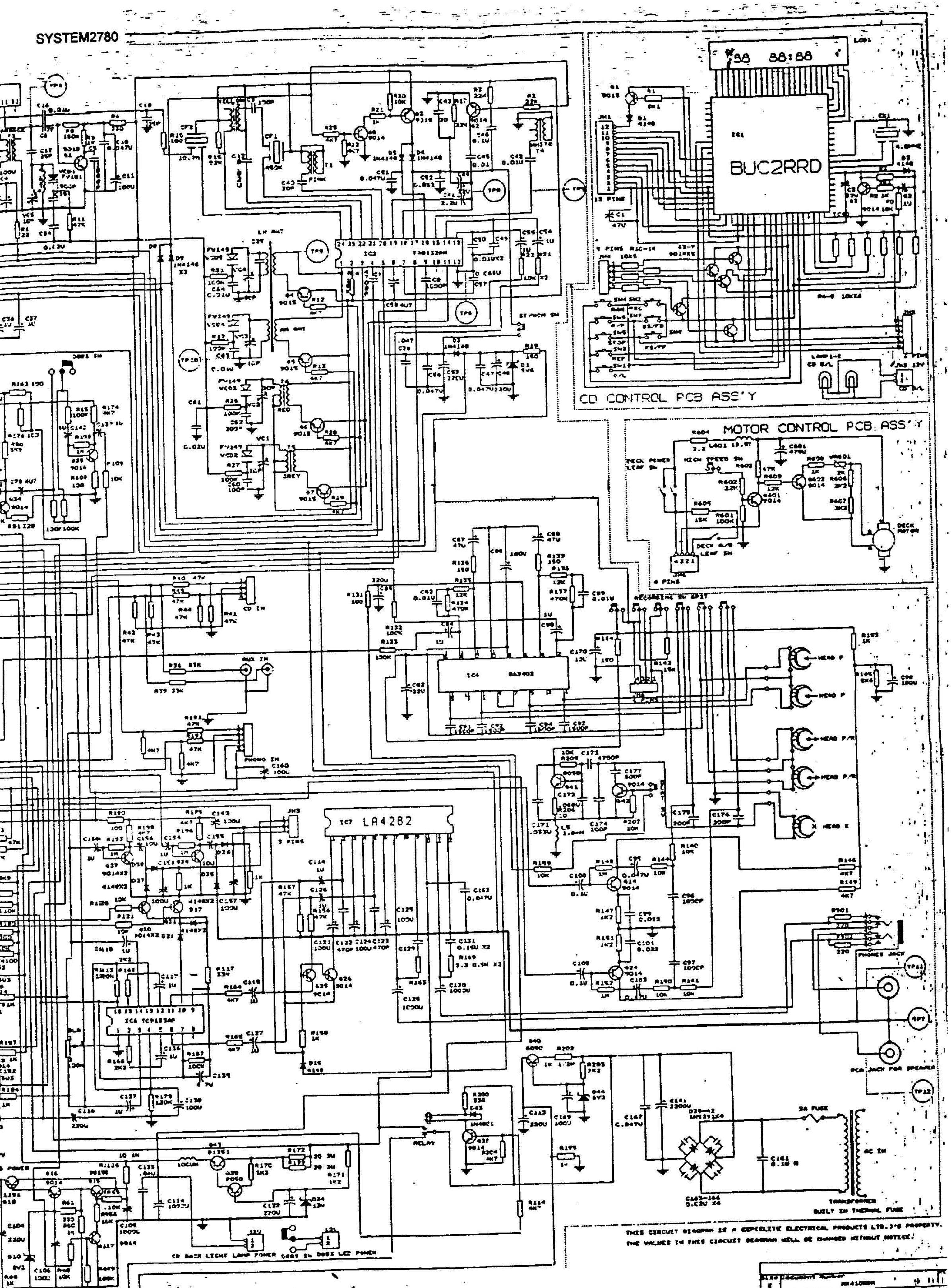
			CDR-250 R1-SI	
			Sheet : /	Size :

1. Circuit Diagram


DTS PCB ASS'Y
MAIN PCB ASS'Y
REMOTE CONTROL TRANSMITTER PCB ASS'Y
NOTE: SW1=SW901 SW19=SW919
LCD1
IC1 TC9307-014
IC4 TC9149P
IC7 TC9149P
IC6 TC4013BP
IC7 TC 4052
IC7 KA2107A
IC5 TC 4017BP
IC6 TC 4532BP
IC3 TC 4017BP
IC2 TC 4532BP
IC901 TC9148P
FM ANT
10 PINS
11 PINS
5 PINS
2 PINS
3 PINS
POWER SW
RE1 IR MODULE
VOLUME DOWN
VOLUME UP
METER VU
LAMP3-6 VU B/L
LAMP1-2 DIS B/L
MIC JACK
STANDBY
TAPE
CD/AUX
PHONO
RADIO
ROCK
CLASSIC
POP
FLAT
SW6 TURN DOWN
SW10 SCAN
SW7 TURN UP
SW9 MEMORY
SW13 SLEEP
SW8 BAND
SW12 TIMER
SW11 MODE
SHIFT
BATTERY 3V
TUNER
CLASSIC

SYSTEM2780


MAIN PCB ASS'Y
IC1 TA8176
IC2
IC3 TC 40175P
IC4 TC 4053P
IC5 TC4013BP
IC6 TC9153AP
IC7 TC 4052
IC7 KA2107A
IC7 LA42
FM ANT
LW ANT
AM ANT
MW ANT
TP1
TP2
TP3
TP6
TP9
TP10
STEREO
10 PINS
5 PINS
11 PINS
3 PINS
JW1
JW2
JW3
JW4
CD IN
AUX IN
PHONO IN
MIC JACK
LAMP1-2 DIS B/L
LED2
LED4
LED5
LED6
LED7
CD/AUX
PHONO
CLASSIC
POP
FLAT
TAPE
TUNER
ROCK
CD POWER
CD BACK LIGHT LAMP POWER
LED POWER
DBBS
YELLOW
PINK
RED
GREY
10.7M
450K
4148X3
4148X4
9014
9015
1N4148 X2


LCD1
88 88:88
IC1
BUC2RRD
JM1
12 PINS
CD CONTROL PCB ASS'Y
MOTOR CONTROL PCB ASS'Y
DECK POWER LEAF SW
HIGH SPEED SW
DECK A/S LEAF SW
DECK MOTOR
4 PINS
IC2
LW ANT
AM ANT
ST/MONO SW
DBBS SW
CD IN
AUX IN
PHONO IN
IC4
RECORDING SW
HEAD P
HEAD P/R
HEAD E
IC7 LA4282
IC6
JM3
3 PINS
PHONES JACK
RCA JACK FOR SPEAKER
RELAY
3A FUSE
AC IN
TRANSFORMER
BUILT IN THERMAL FUSE
CD BACK LIGHT LAMP POWER
DBBS SW
DBBS LED POWER
THIS CIRCUIT DIAGRAM IS A COPCELITE ELECTRICAL PRODUCTS LTD.'S PROPERTY.
THE VALUES IN THIS CIRCUIT DIAGRAM WILL BE CHANGED WITHOUT NOTICE.
Size
Document Number
Date

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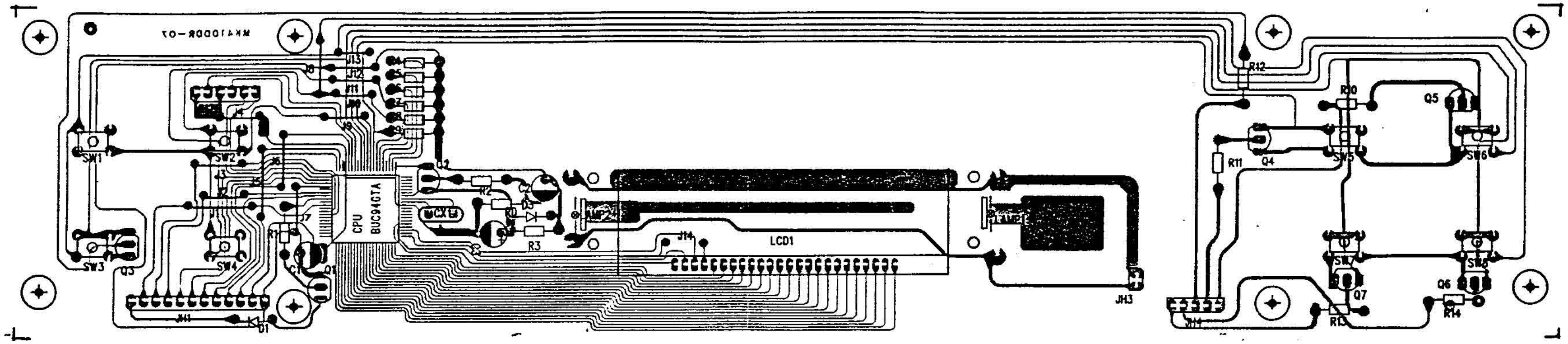
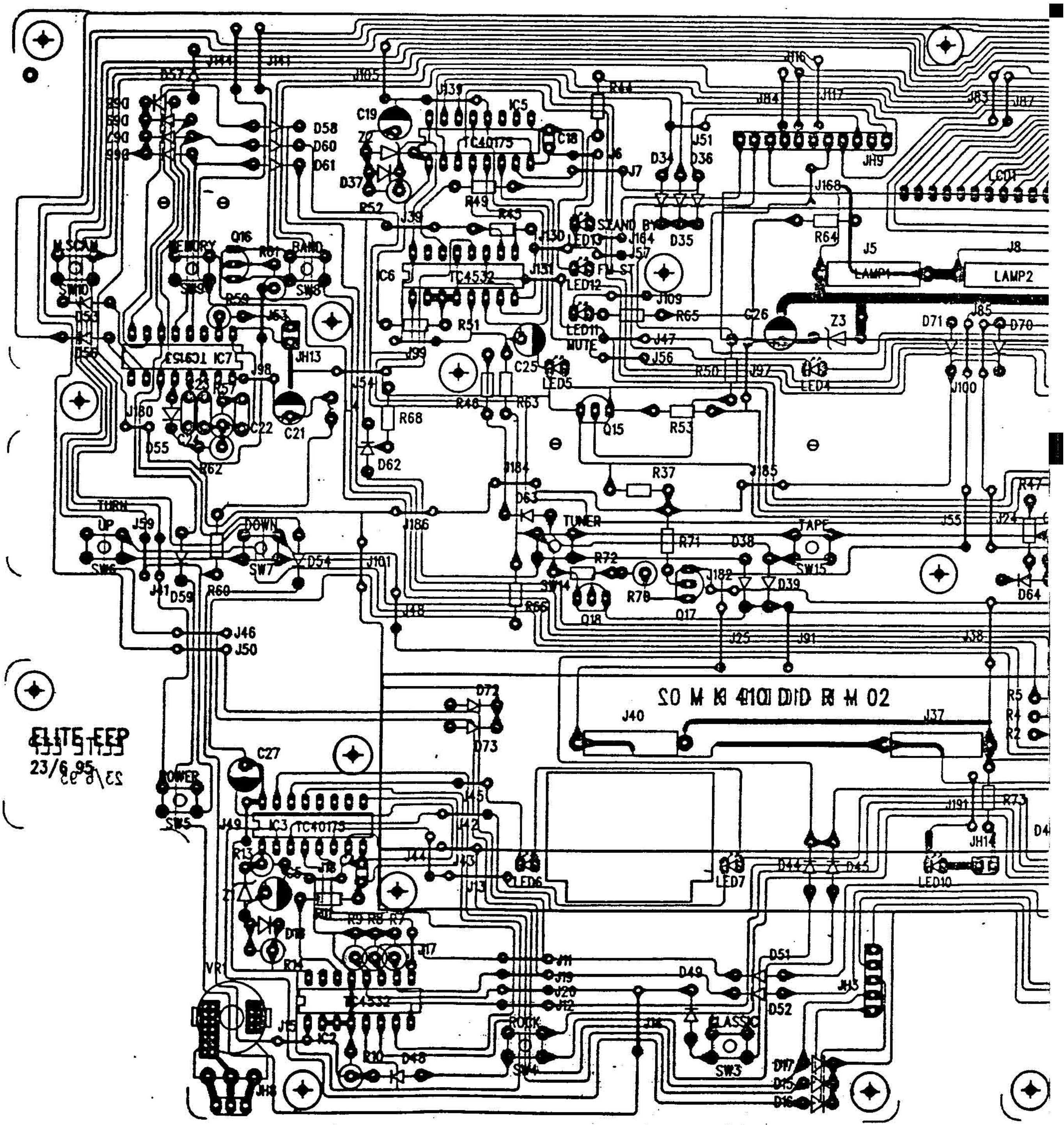
2. PCB & Component Layout Diagram


SW1
SW2
SW3
SW4
Q3
JH1
D1
J13
J12
J11
J10
J9
CPU
BUC94GTA
R1
C1
Q1
Q2
R2
R3
D3
LCD1
J14
JH3
R12
R10
Q5
R11
Q4
SW5
SW6
SW7
SW8
Q6
Q7
R13
R14
JH4



ELITE EEP
23/6/95
D57
J144
J141
J105
J116
J117
J184
J83
J87
D68
D65
D67
D66
D58
D60
D61
C19
ZC
D37
R52
J139
IC5
TC40175
C18
R44
J6
J7
D34
J51
D36
JH9
LCD1
R49
R45
J39
J130
STAND BY
J164
LED13
D35
J168
R64
M.SCAN
MEMORY
Q16
R61
BAND
IC6
TC4532
J131
FM ST
J57
LED12
J5
J8
LAMP1
LAMP2
SW10
SW9
R59
SW8
J63
J109
R51
R65
C26
Z3
D53
D56
IC7
LC4501
JH13
J99
C25
LED11
MUTE
J47
J56
D71
J85
D70
J98
J54
LED5
R50
J97
LED4
J100
J180
C23
R57
C24
C22
C21
R68
R48
R63
Q15
R53
D55
R62
D62
J184
R37
J185
TURN
UP
J59
DOWN
J186
D63
TUNER
R71
D38
TAPE
J55
J24
R47
SW6
J41
D59
R60
SW7
D54
J101
R72
SW14
R70
J182
D39
SW15
D64
Q18
Q17
R66
J48
J25
J91
J38
J46
J50
D72
D73
J40
20 M K 4101 DID R M 02
J37
R5
R4
R2
C27
POWER
SW5
J45
IC3
TC40175
J49
J42
R13
J191
R73
JH14
D4
J18
J44
J43
J13
LED6
LED7
D44
D45
LED10
C6
Z1
R11
R9
R8
R7
D13
J17
R14
VR1
J11
J19
J20
J12
D49
D51
D52
JH3
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ROCK
J16
CLASSIC
R10
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SW4
SW3
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D15
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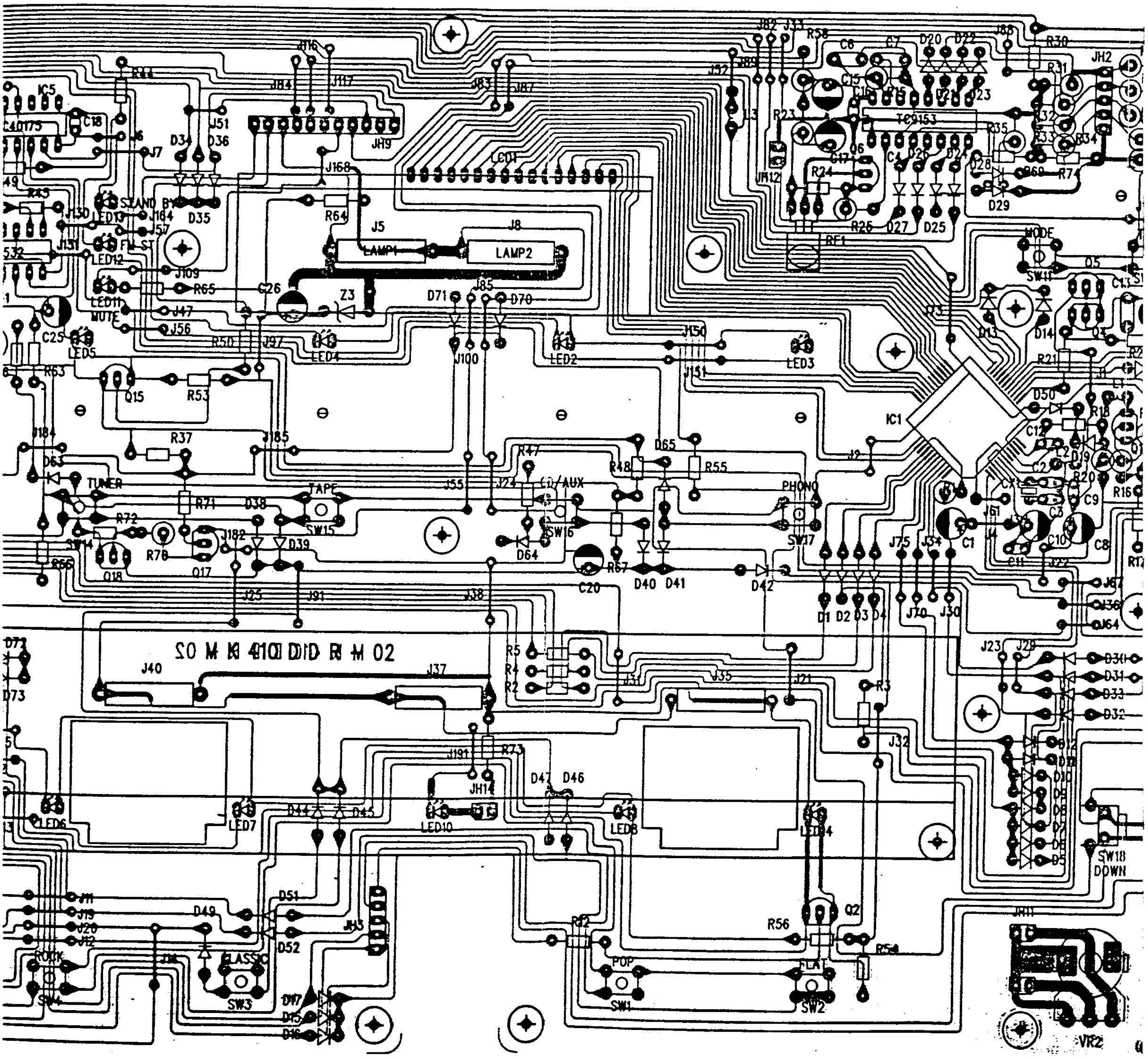
JH8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FM ST
LED12
J131
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LED11
MUTE
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C26
Z3
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R64
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LAMP2
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LED2
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LED3
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LED5
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Q15
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TAPE
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Q17
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R48
D65
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D41
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SW17
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R2
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D15
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FLAT
SW2
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C6
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D20
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R30
JH2
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J13
R23
C15
C16
R15
D21
D23
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R33
R35
R34
JH12
R24
C17
Q6
C4
D26
D24
D28
R69
R74
D29
R25
D27
D25
RF1
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C13
D13
D14
Q4
R21
D50
R18
L1
C12
C2
D19
R20
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C1
C3
C9
C10
C8
C11
J61
J4
J75
J34
J22
J67
J36
J64
D1
D2
D3
D4
J70
J30
J23
J28
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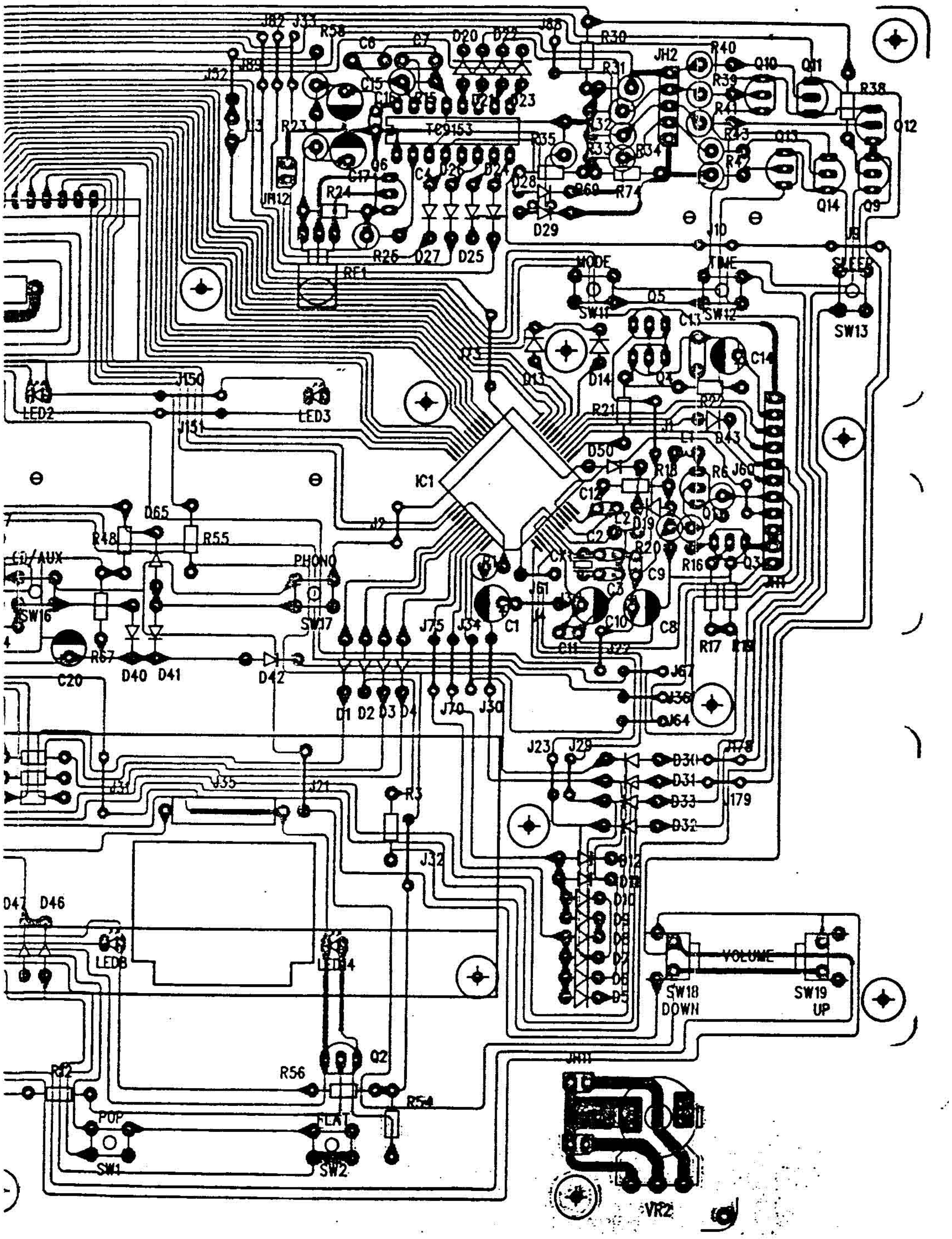
VR2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D21
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Q12
J13
R23
C16
TC9153
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R41
R43
Q13
Q6
R33
R34
R42
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R24
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C4
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D24
D28
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R74
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Q9
D29
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D27
D25
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MODE
TIME
SLEEP
Q5
SW11
SW12
SW13
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C14
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D14
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D50
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R6
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C12
L2
D19
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D65
R48
R55
C2
R20
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PHONO
R16
Q3
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CX1
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C3
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C1
C10
C8
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SW17
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D3
D4
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D32
J31
J35
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R3
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D12
D11
D10
D9
D8
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D6
D5
D47
D46
LED8
LED4
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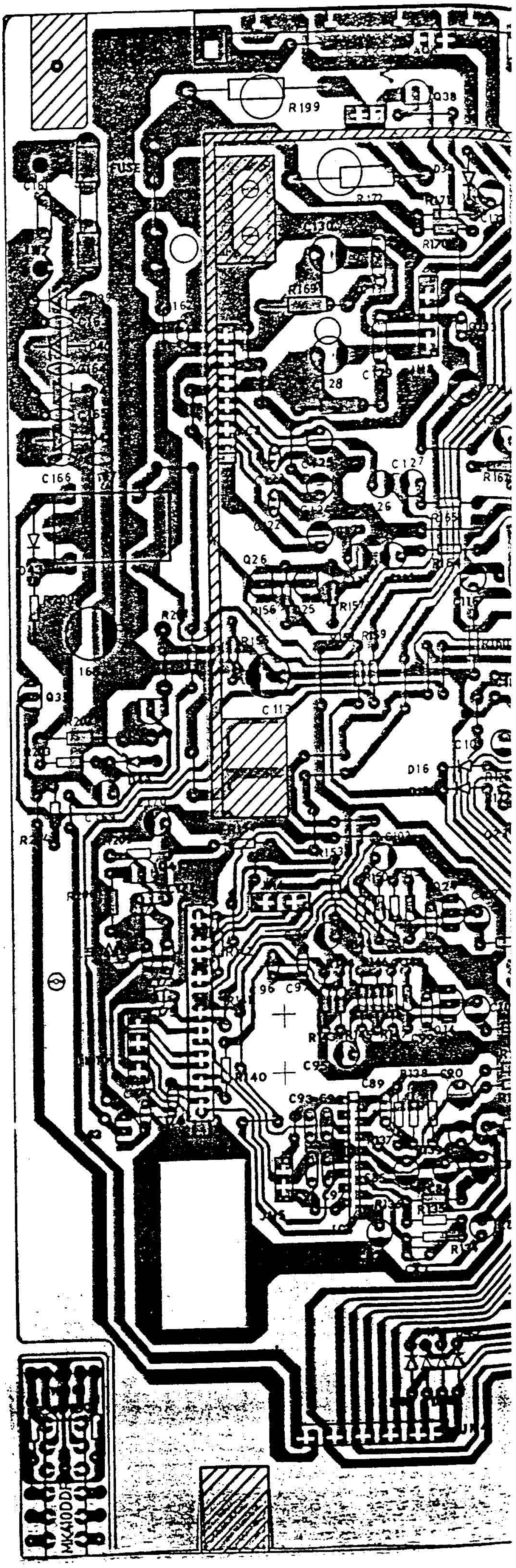
SW2
VR2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C127
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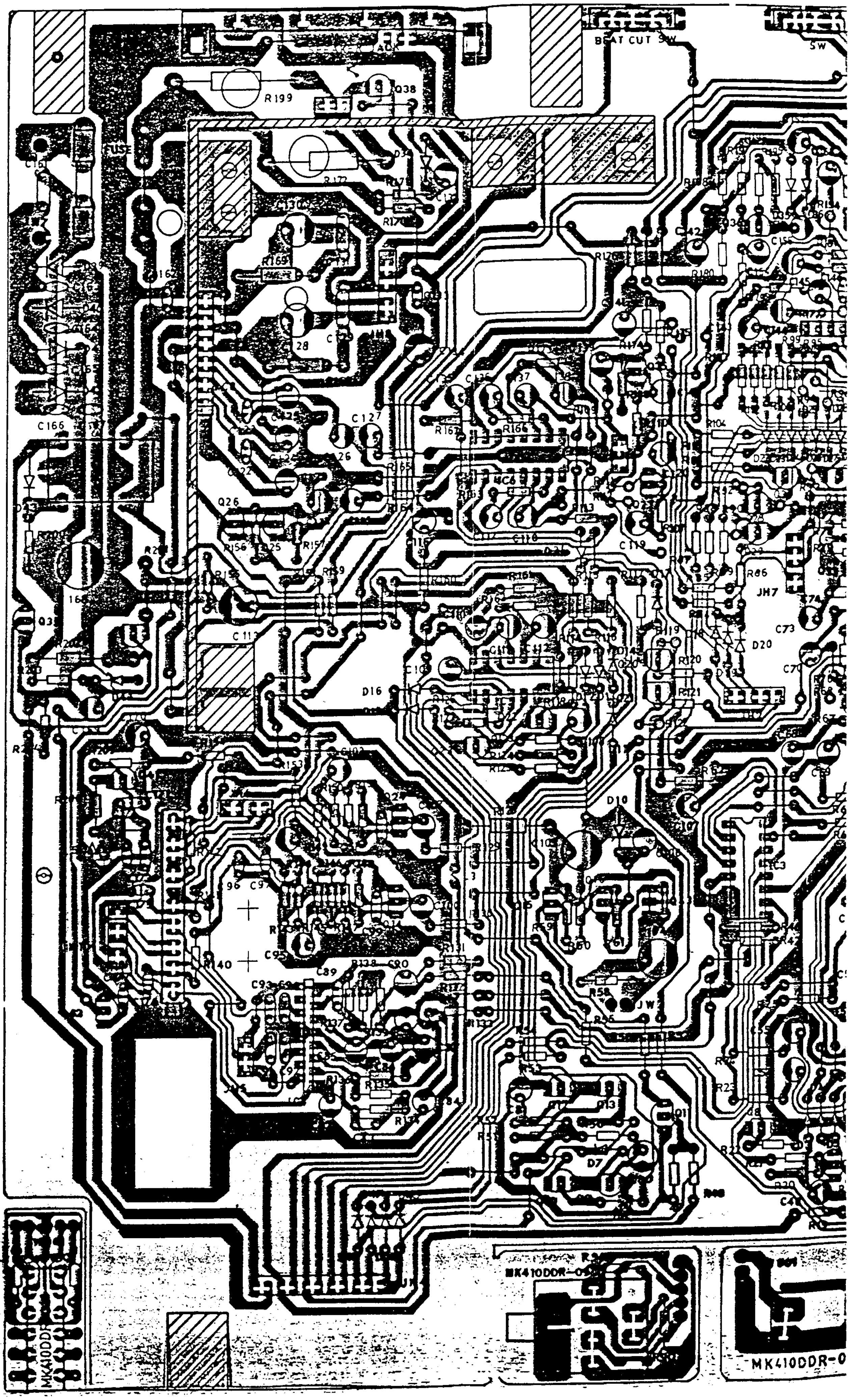
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D16
R161
R160
C119
C118
R178
R180
C142
R104
R120
R121
R86
JH7
C73
D20
C70
D10
R140
C95
R138
C90
C93
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R134
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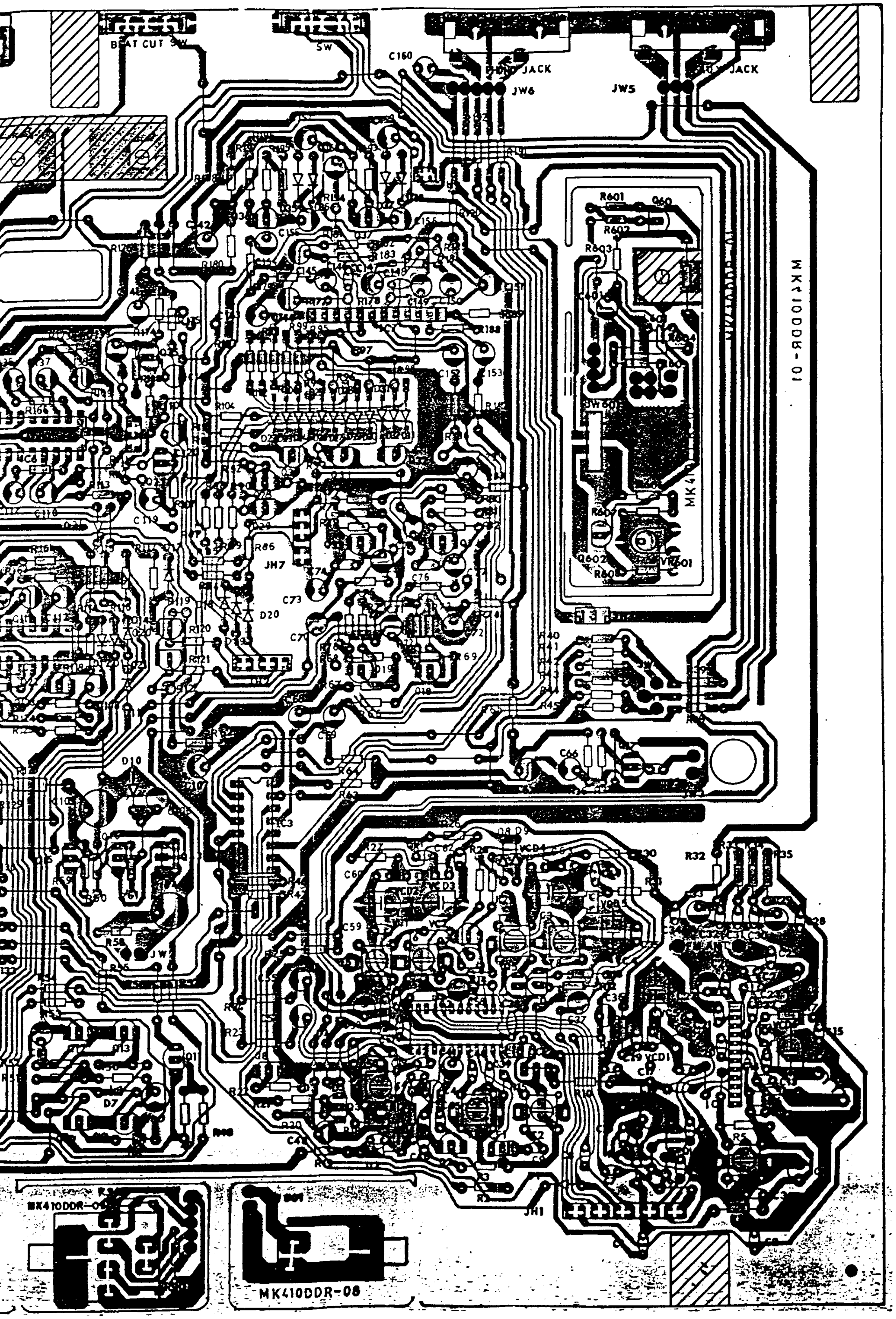
R23
MK410DDR-05
MK410DDR-0
MK410DDF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R183
C145
C149
C150
C152
C153
R188
R104
R165
C118
C119
R86
JH7
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C73
C76
C71
R69
R67
R120
R121
R119
D10
R64
R63
C66
IC3
R40
R41
R43
R45
R27
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C60
C59
C62
C7
C8
C39
D3
D8 D9
VCD4
VCD1
R23
R22
R10
R5
R2
R3
C41
C2
C15
C28
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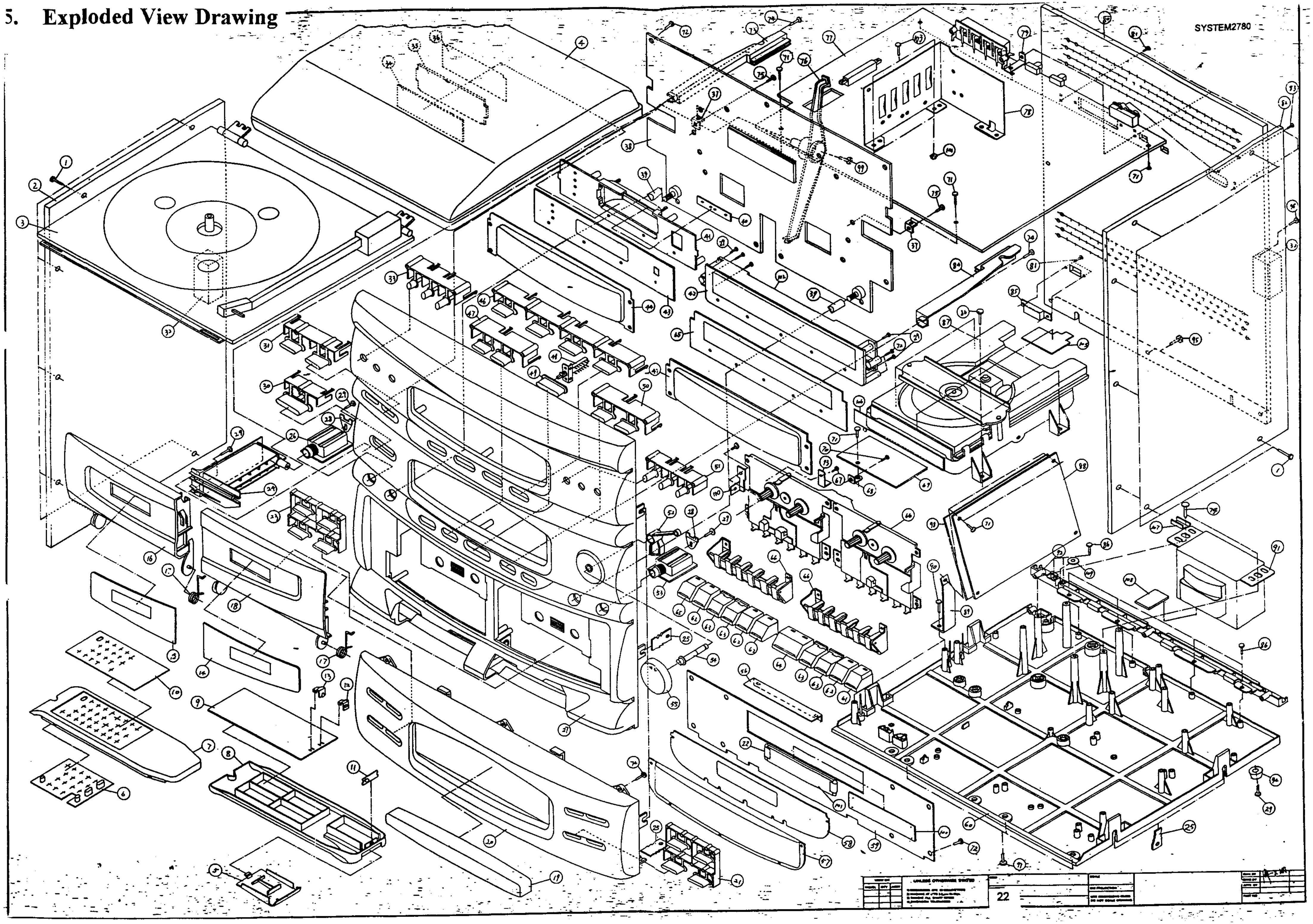
MK410DDR-09

5. Exploded View Drawing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6. IC & Transistor Voltage Chart

IC7· LA4282 (VOLTAGE CHART) PoWER AMP

NO.	VOLTAGE (V)	CONDITION (1)	VOLTAGE (V)	CONDITION (1)
1.	1.07	NO ACTIVE	1.07	MUTIVE ACTIVE
2.	0.7	NO ACTIVE	0.7	MUTIVE ACTIVE
3.	16.95	NO ACTIVE	16.95	MUTIVE ACTIVE
4.	0	NO ACTIVE	0	MUTIVE ACTIVE
5.	0.71	NO ACTIVE	0.71	MUTIVE ACTIVE
6.	1.07	NO ACTIVE	1.07	MUTIVE ACTIVE
7.	16.9	NO ACTIVE	16.9	MUTIVE ACTIVE
8.	0	NO ACTIVE	0	MUTIVE ACTIVE
9.	0	NO ACTIVE	0	MUTIVE ACTIVE
10.	34.56	NO ACTIVE	34.56	MUTIVE ACTIVE
11.	16.9	NO ACTIVE	16.9	MUTIVE ACTIVE
12.	0	NO ACTIVE	0	MUTIVE ACTIVE

IC 2 TA8132AN (VOLTAGE CHART) I F AMP

PIN NO.	FM STATE VOLTAGE (V) STEREO	FM STATE VOLTAGE (V) MONO	AM STATE VOLTAGE (V)	LW STATE VOLTAGE (V)
1.	4.65	4.81	4.84	4.84
2.	4.59	4.76	4.78	4.79
3.	4.65	4.82	4.84	4.84
4.	4.66	4.82	4.49	4.49
5.	4.65	4.83	4.85	4.24
6.	4.09	4.18	4.25	4.24
7.	1.13	0.72	0.22	0.23
8.	0	0	0	0
9.	4.65	4.83	4.85	4.85
10.	0	0	1.48	1.23
11.	0.21	4.3	4.43	4.31
12.	0	0	0	0
13.	1.02	1.03	1.03	1.03
14.	1.03	1.03	1.03	1.03
15.	4.13	4.10	4.34	4.34
16.	3.65	3.95	5.05	5.05
17.	3.83	3.95	5.07	5.07
18.	0.65	0.65	0.64	0.64
19.	0.9	0.81	1.29	1.31
20.	3.96	3.96	4.36	4.31
21.	4.65	4.84	4.84	4.84
22.	4.48	4.66	4.12	4.12
23.	4.66	4.84	4.85	4.85
24.	4.80	4.85	4.85	4.85

IC 4 BA3402 (VOLTAGE CHART) DECK AMP

PIN NO.	CASSETTE B PALY/REC VOLTAGE (V)	CASSETTE A PLAYBACK VOLTAGE (V)
1.	3.23	3.23
2.	3.26	3.26
3.	0	0
4.	3.22	3.22
5.	3.22	3.22
6	7.53	7.53
7.	3.22	3.22
8.	3.22	3.22
9.	3.22	3.22
10.	0	0
11.	3.22	3.22
12.	3.22	3.22
13.	0	0
14.	3.29	3.29
15.	3.22	3.22
16.	2.91	0.86

IC 5 TC4013 (VOLTAGE CHART)

PIN	POWER ON VOLTAGE (V)	POWER OFF VOLTAGE (V)	MUTE STATE VOLTAGE (V)	OFF/ON VOLTAGE (V)
1.			0	4.25
2.			5.53	0
3			0	0
			0	0
5.			5.53	0
6.			0	0
7.			0	0
8.	0	0	0	0
9.	0	5.0		
10.	0	0		
11.	5.53	0		
12.	0	5.0		
3.	5	0		
14.	5.53	5.53		

IC 6 TC9153AP (VOLTAGE CHART)

PIN NO.	INACTIVE VOLTAGE (V)	PRESS VOLUME UP VOLTAGE (V)	PRESS VOLUME DOWN VOLTAGE (V)
1.	0	0	0
2.	2.7	2.7	2.7
3.	2.7	2.7	2.7
4.	2.7	2.7	2.7
5.	2.7	2.7	2.7
6.	2.7	2.7	2.7
7.	5.5	5.5	5.5
8.	5.4	5.4	5.4
9.	5.4	2.7	5.4
10.	5.4	5.4	0.5
11.	2.7	2.7	2.7
12.	2.7	2.7	2.7
13.	2.7	2.7	2.7
14.	2.7	2.7	2.7
15.	2.7	2.7	2.7
16.	5.5	5.5	5.5

IC3 TC4052BP (VOLTAGE CHART (V)

P/N NO.	RADIO (V)	CD/AUX	TAPE	DHONO
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	4.05	0	0
9	0	4.05	0	3.8
10	0	0	4	3.8
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	5.4	5.4	5.4	5.4

IC 5
IC 3 40175 (VOLTAGE CHART)

PIN	VOLTAGE (V)	PIN	VOLTAGE (V)
1.	0	9.	0
2.	5.67	10.	5.6
3.	0	11.	0
4.	0	12.	0.12
5.	0	13.	0
6.	5.26	14.	5.67
7.	0	15.	0
8.	0	16.	5.68

IC1 FM FRONT AMP (RF)
IC1 TA8176SN (VOLTAGE CHART)

P/N NO.	VOLTAGE (V)
1	2.87
2	1.47
3	0.74
4	5.24
5	5.22
6	0
7	7.85
8	5.24
9	4.98
10	0
11	5.19
12	5.06

IC 6 TC9153AP (VOLTAGE CHART)

PIN NO.	INACTIVE VOLTAGE (V)	PRESS VOLUME UP VOLTAGE (V)	PRESS VOLUME DOWN VOLTAGE (V)
1.	0	0	0
2.	2.7	2.7	2.7
3.	2.7	2.7	2.7
4.	2.7	2.7	2.7
5.	2.7	2.7	2.7
6.	2.7	2.7	2.7
7.	5.5	5.5	5.5
8.	5.4	5.4	5.4
9.	5.4	2.7	5.4
10.	5.4	5.4	0.5
11.	2.7	2.7	2.7
12.	2.7	2.7	2.7
13.	2.7	2.7	2.7
14.	2.7	2.7	2.7
15.	2.7	2.7	2.7
16.	5.5	5.5	5.5

IC7 KA2107A (PRESET EQ)
VOLTAGE CHART (V)

P/N NO.	ROCK	CLASSIC	POP	FLAT
1	4	4	4.1	3.6
2	6.5	9.5	8.6	6.6
3	4	6.8	6.9	3.8
4	4.6	3	3	4.6
5	4.4	1.8	6.9	4.5
6	3.4	3	3	3.6
7	9	0	0	9.2
8	4	2.6	6	4.1
9	3.8	3	2.6	3.8
10	3.8	6.9	6.8	3.8
11	3.2	3.15	3	3.2
12	3.4	9.2	6.4	3.5

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IC: 1 TC9307 (VOLTAGE CHART) DTS PCB

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
FM STATE VOLTAGE (V)	0	0	0	0	5.2	5.2	5.2	5.2	2.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7	5.2	3.7	3.7	3.7	3.7	3.7
AM STATE VOLTAGE (V)	0	0	0	0	5.2	5.2	5.2	5.2	2.3	3.7	3.7	3.7	3.7	3.7	3.7	3.7	5.2	3.7	3.7	3.7	3.7	3.7

PIN NO.	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
FM STATE VOLTAGE (V)	3.7	3.7	3.7	5.2	0	5.8	5.8	5.8	0	2.6	1.0	0.4	5.7	2.6	0	0	5.2	2.4	1.9	5.2	0	0
AM STATE VOLTAGE (V)	3.7	3.7	3.7	5.2	0	5.8	5.8	0	0	2.6	1.0	0.4	5.7	0	0	2.5	2.4	1.9	5.2	0	0	

IC202 REMOTE SENSOR (VOLTAGE CHART)

P/N NO.	VOLTAGE (V)
1.	0.63
2.	0.00
3.	5.43

IC 4 & IC 7 TC9149 (VOLTAGE CHART) DTS PCB

P/N NO.	VOLTAGE (V)	CONDITION 1	VOLTAGE (V)	CONDITION 2
1.	0	NO FUNCTION	0	0
2.	0	NO FUNCTION	5.34	REMOTE IN 0.6V
3.	0	NO FUNCTION	5.34	SKIP DOWN
4.	0	NO FUNCTION	5.34	SKIP UP
5.	0	NO FUNCTION	5.34	SKIP DOWN
6.	0	NO FUNCTION	5.34	SKIP UP
7.	0	NO FUNCTION	5.34	REPEAT
8.	0	NO FUNCTION	5.34	STOP
9.	0	NO FUNCTION	5.34	MUTE
10.	0	NO FUNCTION	5.34	POWER
11.	0	NO FUNCTION	5.34	PLAY
12.	0	NO FUNCTION	5.34	SECH
13.	0			
14.	5.53			
15.	2.37			
16.	5.33			

IC2,6 4532 (VOLTAGE CHART)

PIN	VOLTAGE (V)	PIN	VOLTAGE (V)
1.	0	9.	0
2.	0	10.	0
3.	0	11.	0
4.	0	12.	0
5.	5.67	13.	0
6.	0	14.	0
7.	0	15.	5.68
8.	0	16.	5.68

7. Electrical Performance Specifications

SECTION: FM

PAGE: 1/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
SENS. 30dB S/N	90MHz	uV	5	10	
	98MHz	uV	5	10	
	106MHz	uV	5	10	
3dB LIMITING SENS	98MHz	uV	8	12	
IF REJECTION		dB	55	50	
AM REJECTION		dB	35	30	
IF ALIGNMENT		MHz	10.7	+/-0.2	
IMAGE REJECTION		dB	30	20	
OVERLOAD DISTORTION	30mV 75kHz	%	1	3	
RF OVERLOAD		mV/m		>100	
MODULATION HUM		dB	50	40	
MIN. VOL. HUM		mV	1	4.5	
THD AT 1mV/m INPUT		%	1	3	
FRE. COVERAGE		MHz	87.5	108	
POWER OUTPUT	THD 10% MOD 40kHz	W	7		
FRE. RESPONSE	-4dB	Hz	80	10k	

SECTION: AM PAGE:2/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
SENS. 20dB S/N	603 kHz	uV/m	600	1000	
	999 kHz	uV/m	600	1000	
	1404 kHz	uV/m	600	1000	
IF REJECTION		dB		>50	
IMAGE RATIO		dB	35	28	
IF HARMONIC TWEET		%	2	10	
10KHz SELECTIVITY		dB	20	13	
AGC FOM		dB	25	35	
OVERLOAD DISTORTION	50mV/m 80% MOD	%	1	3	
RF OVERLOAD	10% THD OUTPUT	mV/m		>100	
MODULATION HUM	50mV/m INPUT	dB	40	35	
MIN. VOL. HUM		mV	1	3	
IF ALIGNMENT		kHz	450kHz	+/-5%	
6 dB BANDWIDTH		kHz	5	10	
THD AT 5mV/m		%	1	3	
OSC. FALL OUT	AC	V	220	+/-10%	
POWER OUTPUT	THD=10%/MOD=60%	W	7		
FRE. RESPONSE	-6dB	Hz	100-2500		
FRE. COVERAGE		kHz	531-1602		

SECTION: LW PAGE:3/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
SENS. 20dB S/N	164 kHz	uV/m	1000	2000	
-	209 kHz	uV/m	1000	2000	
	263 kHz	uV/m	1000	2000	
IF REJECTION		dB		>50	
IMAGE RATIO		dB	35	28	
IF HARMONIC TWEET		%	2	10	
10KHz SELECTIVITY		dB	20	13	
AGC FOM		dB	25	35	
OVERLOAD DISTORTION	50mV/m 80% MOD	%	1	3	
RF OVERLOAD	10% THD OUTPUT	mV/m		>100	
MODULATION HUM	50mV/m INPUT	dB	40	35	
MIN. VOL. HUM		mV	1	3	
IF ALIGNMENT		kHz	450kHz	+/-5%	
6 dB BANDWIDTH		kHz	5	10	
THD AT 5mV/m		%	1	3	
OSC. FALL OUT	AC	V	220	+/-10%	
POWER OUTPUT	THD=10%/MOD=60%	W	7		
FRE. RESPONSE	-6dB	Hz	100-2500		
FRE. COVERAGE		kHz	146-281		

SECTION: CD PAGE:4/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
FRE. RESPONSE	AMP. OUTPUT	Hz	100-10k +2/-3dB	100-10k +3/-5dB	
TOTAL HARMONIE DISTOR	AMP. OUTPUT	%	1	3	
CHANNEL SEPTARATION	1kHz AMP. O/P	dB	35	30	
CHANNEL BALANCE	1kHz AMP. O/P	dB	1	3	
S/N RATIO	AMP. O/P	dB	50	40	
CD PLAY LEVEL	1kHz/REF. LEVEL	dB	+6dB	+/-2dB	
CD PLAY OUTPUT	THD 10% 1kHz	W	7		
MIN. VOL. HUM	MIN. VOL. RMS	mV	1	3	
MAX. VOL. HUM	MAX. VOL. RMS	mV	20	50	

SECTION: TAPE PAGE:5/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
TAPE SPEED		Hz	3000	+3/-2%	
S/N RATIO		dB	35	30	
CROSS TALK		dB	35	30	
MOTOR & AMP. NOISE	VOL. MAX.	mV	100	150	
MIN. VOL. HUM		mV	1	3	
POWER OUTPUT	THD 10%	W	7		
FRE. RESPONSE	-6dB	Hz	125	6.3k	
REC. PLAYBACK FRE. RES.	-6dB	Hz	125	6.3k	
REC. PLAYBACK LEVEL		dB	1	3	
REC. PLAYBACK DISTORTION		%	3	5	
RECORD S/N		dB	35	30	
WOW & FLUTTER	JIS	%	0.3	0.45	
PLAY DISTORTION	1kHz	dB	2	4	
CD REC. P/B DISTORTION	1kHz +6dB	%	5	10	
CD REC. P/B LEVEL	1kHz +6dB	dB	0	+/-3	

SECTION: AUDIO PAGE:6/6

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
XBS EFFECT	100Hz/1KHz	dB	+7	+/-2	
REF. OUTPUT THD		%	1	3	
CH. BALANCE		dB	1	3	
AUX SENS		mV	300	+/-3dB	
PRESET EQ EFFECT.					
ROCK	100HZ/1KHZ 0dB	dB	+7	+/-2	
	1KHZ/1KHZ 0dB	dB	0	+/-2	
	10KHZ/1KHZ 0dB	dB	+5	+/-2	
CLASSIC	100HZ/1KHZ 0dB	dB	+5	+/-2	
	1KHZ/1KHZ 0dB	dB	0	+/-2	
	10KHZ/1KHZ 0dB	dB	+3	+/-2	
POP	100HZ/1KHZ 0dB	dB	-2	+/-2	
	1KHZ/1KHZ 0dB	dB	+2	+/-2	
	10KHZ/1KHZ 0dB	dB	-3	+/-2	

SECTION: HIGH VOLT. TEST PAGE:

ITEM	CONDITION	UNIT	NOMINAL	LIMIT	SAMPLE
HIGH VOLT. TEST	1MIN./1mA AC	V		4000	

8. Bill of material

** MODEL NUMBER : MK407DDR-69

* ASSEMBLY PART NUMBER : A0111001001 MAIN ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A0241000001	NTA950156	HEAT SINK COMPAUND (10LB/CAN)
A061204B0000	A940557RC	CD SHIELD PLATE
A061508A0000	A950192	CD BRACKET COVER
A101521A7523	A950208	DTS WHITE PAPER (75.2 x 23.5 x 0.1)
A101521A7818	A950208	CD WHITE PAPER (77.5 x 17.8 x 0.1)
A11BPNM3006	A950205	MACHINE SCREW BM 3 X 6 Ni-PT
A11PPNM2003		MACHINE SCREW PM 2 X 3 Ni-PT
A11PPNM3006		MACHINE SCREW PM 3 X 6 Ni-PT
A12BPCG3010		SELF-TAPPING SCREW BT 3 X 10 TYPE BT ZC-PT
A12BPCG3012	A940528	SELF-TAPPING SCREW BT 3 X 12 TYPE BT ZC-PT
A12BPNA3010		SELF-TAPPING SCREW BA 3 X 10 TAPE 'A'
A12FPBA4012		SELF-TAPPING SCREW 4 X 12 (D/N:0001) BLACK
A12LPBA4018		SELF-TAPPING SCREW 4 X 18 (D/N:0002) BLACK
A12PPCS3005		SELF-TAPPING SCREW PS 3 X 5 TYPE S ZC-PT
A12PPNA3010		SELF-TAPPING SCREW PA 3 X 10 Ni-PT

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A12PPNA3012		SELF-TAPPING SCREW PA 3 X 12 Ni-PT
A12WPNA3010	A950192	SELF-TAPPING SCREW PWA 3 X 10 Ni-PT
A12WPNA3014		SELF-TAPPING SCREW PWA 3 X 14 Ni-PT
A12WPNA3030	A950192	SEIF TAPPING SCREW PWA 3 x 30 Ni PT
A12WPNG3008		SELF-TAPPING SCREW PWT 3 X 8 TYPE BT Ni-PT
A12WPNG3010		SELF-TAPPING SCREW PWT 3 X 10 TYPE BT Ni-PT
A12WPNG3012		SELF-TAPPING SCREW PWT 3 X 12 TYPE BT Ni-PT
A15R1020051		RUBBER FOOT (S/N:SF1406S)
A15R2912033	A950193	RUBBER 29mm X 12.5mm X 3mm BLACK W/TAPE
A210515A000E		WOODEN CUBE 20 X 17 X 50mm
A211501A0000		SIDE WOODEN BOARD (L)
A211502A0000		SIDE WOODEN BOARD (R)
A221202A0000	A940531	TIN FIBRE PAPER
A3FFR753312		FIBRE WASHER ID=3.3mm , OD=7.5mm THK=1.2mm
A3RCR115008		E - RING WASHER OD=11mm , ID=5mm, THK=0.8mm (2011-3)
A3TER241140		TRANSFORMER WASHER 24mm X 11mm X 4mm
A51107261M		POWER TRANSFORMER EI-66 230V BS STD. M3515-29
A52865021A		POWER LINE CORD BS APPR. 6500 6.5 FEET W/PLUG & 3A FUSE SOLDERING BLACK
A5735201880		FOUR SHIELD & JUMPER WIRE HOUSING ASS'Y 8 PINS L=200mm JST 2.0mm DOUBLE HEAD 1095#28 2584#30
A5735221601		JUMPER WIRE HOUSING ASS'Y 6 PINS & 5 PINS 1095#28L=220mm JST 2.0mm (1-4, 2-3, 4-2, 5-5, 6-1)
A5735221800	NTA940477RC	JUMPER WIRE HOUSING ASS'Y JST 2.0mm L=220mm 1007#30 DOUBLE HEAD 8 PINS
A5735301600	A940512	JUMPER WIRE HOUSING ASS'Y L=300mm DOUBLE HEAD 6PINS JST

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
		2.0mm 1095#28 (OPEN 5mm)
A6315220031	NTA940413	JUMPER WIRE 1007#26 1500mm BLACK (OPEN 5mm)ONE SIDE NOT OPEN
A6321122031	NTA940413	JUMPER WIRE 1007#26 210mm BLACK (OPEN 5mm)
A6336122031	NTA950170	JUMPER WIRE 1007 AWG26 360mm BLACK
A65110102	NTA950213	CABLE TIE 4"
A65176102	NTA940413	CABLE TIE 3"
A65200019	NTA940413	UL TAPE (BLACK)
A6603CE20E	NTA940413	CLOSE-END WIRE CONNECTOR UL (CE-2)
A69642HD550H		TURNTABLE ASS'Y 8" AUTO STOP, CERAMIC HEAD. 12V DCHANPIN HP-D550
A69859M3001S		FRONT LOADING CD MECHANISM CMS-M3 W/O CABLE
A70CDR250R1T	A940507	CD PCB ASS'Y MODEL CDR250R1-FR
A991501A69A1		VU METER W/ARTWORK
AM014RA0000		SPEAKER FIXED PLATE #04
AM018RA0000		ESCUTCHEON MTG PLATE
AM06009A0000		U NAIL 4 X 22mm
AM067NA0000	NTA940413	SOLDERING LUG (10014)
AM11004A0000		MAIN P.C.B. BRACKET
AM12002C0000	NTA950211RC	CD BRACKET
AM14005A0000		MOTOR PCB BRACKET
AM15001A0000		LAMP BRACKET
AM15002A0000		CASSETTE DOOR SPRING
AM15003A0000	A950175	CASS DOOR HOLDER
AMB23RA0100		RECORD PLATE THK.=0.6mm (MB TOOL)
AMJ11RA0100	A950192	CABINET MTG PLATE 'A' DRAWING NO.: AM3023NA (MCP TOOL)
AP007AA0000	A950192	DUST COVER HP-D550
AP12006B0000	A940562	CD BOTTOM PANEL
AP12027A0000		BOTTOM PANEL CONNECTOR
AP15007A0000		CD DISPLAY BRACKET
AP15017A0000		METER BRACKET
AP15018A0000		DISPLAY BRACKET
AP15029A0000		DISPLAY ACRYLIC PLATE
AP15031A0000		RECORD LEVER
AP15032A0000		RECORD HOLDER
AP15033A0000		P.C.B. BRACKET 'R'
AP15034A0000		P.C.B. BRACKET 'L'
AP15035A0000		VOLUME SHAFT
AP15036A0000		VOLUME LEVER

* ASSEMBLY PART NUMBER : A0112030001 REMOTE CONTROL ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A150601A0000		SILICON RUBBER KEY PAD - 32 KEYS
AM06001A0000		BATTERY CONTACT '+' Ni-PT (ME TOOL)
AM06002A0000		BATTERY CONTACT '-' Ni-PT (ME TOOL)
AM06003A0000		BATTERY CONTACT '+ - ' (ME TOOL)

* ASSEMBLY PART NUMBER : A0207006001 REMOTE TRANSMITTER PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A36F0509A72		REMOTE TRANSMITTER PCB MF005DDR-09 THK.=1.0mm (SINGLE)

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A38TC9148P0		I. C. TC9148P
A39101015GR		TRANSISTOR 2SA-1015GR (PNP)
A39201815BL		TRANSISTOR 2SC-1815BL (NPN)
A40201N4148		SWITCH DIODE 1N4148
A4060HI510P		INFRARED LED HI-I510 (HI-SAN)
A546Y4553		CERAMIC RESONATOR HR-Z455K
A6121033511		RESISTOR 1/4W +/-5% 10K OHM
A6211016621		CERAMIC CAP. +/-10% 100PF 50V
A6221072821		ELECT. CAP. +80/-20% 100uF 10V
A64000005		TIN PLATE WIRE OD=0.5mm

* ASSEMBLY PART NUMBER : A0211001001 MAIN PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A070526144A1		FUSE 3.15 LABEL W/ARTWORK (T3.15A L 250V)
A11PPNM3006		MACHINE SCREW PM 3 X 6 Ni-PT
A11PPNM3010		MACHINE SCREW PM 3 X 10 Ni-PT
A14HCNM3020		M3 NUT THK.=2mm (3504-1)
A15C1010102	NTA940128	COIL SPONGE 10mm X 10mm X 10mm WHITE W/O TAPE
A181120A0100		RCA TERMINAL TWO PLUG ONE RED ONE WHITE RJ-1031
A18M20A0100		SPEAKER TERMINAL HSP-104V-01
A30N11A0100		BUSHING
A36K1001A72	NTA950175	MAIN PCB MK410DDR-01 THK.=1.6mm (INCLUDE MK410DDR-03, MK410DDR-06, MK410DDR-08, MK410DDR-09)
A38BA340200		I. C. BA3402
A38KA2107A0		I.C. KA2107A (PRESET EQ)
A38LA428200		I. C. LA4282
A38TA8132AN		I. C. TA8132AN
A38TA8176SN		I. C. TA8176SN
A38TC4013BP		I. C. TC4013BP (M)
A38TC4052BP		IC TC4052BP DIFF 4-CH MUX/DEMUX
A38TC9153AP		I. C. TC9153AP
A3910855000		TRANSISTOR 8550 (PNP)
A39109015C0		TRANSISTOR 9015C (PNP)
A3920805000		TRANSISTOR 8050 (NPN)
A39209014C0	NTA950208	TRANSISTOR 9014C (NPN)
A39209018G0		TRANSISTOR 9018G (NPN)
A3920D13510		TRANSISTOR KTD1351 (NPN)
A3FCC083305		METAL WASHER OD=8mm ID=3.3mm THK.=0.5mm ZC-PT(104)
A40201N4148	NTA950208	SWITCH DIODE 1N4148
A40301N4001		RECTIFIER DIODE 1N4001
A40301N5401		RECTIFIER DIODE 1N5401
A4050SV1010		VAR. CAP. DIODE 1SV101
A4050SV1490		VAR. CAP. DIODE 1SV149
A41451300T		ZENER DIODE 1/2W +/-5% 13V
A41455690		ZENER DIODE 1/2W +/-5% 5V6
A41456290		ZENER DIODE 1/2W +/-5% 6V2
A41458290		ZENER DIODE 1/2W +/-5% 8V2
A4211000304T		AM OSC COIL 10mm RED 10A-00304
A4211089052T		AM IFT COIL 10mm YELLOW 10A-8905(2)
A42110A8906T		AM IFT COIL 10mm WHITE 10A-8906
A42110F8901T		FM IFT COIL 10mm ORANGE 10F-8901

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A42110F8902T		FM DET COIL 10mm PINK 10F-8902
A421A711275C		LW OSC COIL
A43A0752030		AM ANT. COIL 75:20 (M3)
A43L3502530		LW ANT COIL 350:25 (M3) L=120mm
A44258550		FM RF COIL 5 1/2T ID=5mm WIRE=0.8mm ACW
A44358457	A910320	FM OSC COIL 4 1/2T ID=5mm WIRE=0.8mm CW
A45121013C		CHOKE COIL 100uH
A45121823		CHOKE COIL 1.8mH 6X8-CC182
A4720262D01L		RECORDING SWITCH 6P2T 2mm PS-62D01N-NS
A4730922F02S		SILDE SWITCH 2P2T SK-22F02-G9-NS
A49101000		TRIMMER 10PF 10mm
A49103000		TRIMMER 30PF 10mm
A5311010002T	NTA910016	ANTENNA BAR 10 X 100mm AM/LW
A541B4503	A910311	CERAMIC FILTER 450KHZ (450C3N)
A542R1075		CERAMIC FILTER 10.7MHz
A5723000063		10 PINS WAFER JST 2.5mm STRAIGHT
A5723000263		2 PINS WAFER JST 2.5mm STRAIGHT
A5723000363	NTA950208	3 PINS WAFER JST 2.5mm STRAIGHT
A5723000463		4 PINS WAFER JST 2.5mm STRAIGHT
A5723000561		5 PINS WAFER JST 2.5mm STRAIGHT
A5723000A61		11 PINS WAFER 2.5mm JST STRAIGHT
A5733201540		TWIN SHIELD & JUMPER WIRE HOUSING ASS’Y 5 PINS2547#28 1007#26 L=200mm JST 2.5mm (OPEN 5mm)
A5733421200		JUMPER WIRE HOUSING ASS’Y 2 PINS L=420mm 1007#26 JST 2.0 (OPEN 5mm)
A5733421400		TWIN SHIELD WIRE HOUSING ASS’Y 4 PINS L=420mm JST2.0 2547#28 (OPEN 5mm)
A5914FRS450		RELAY FRS4-5(1A) DC 24V CLEAR COVER
A6121003511	NTA950208	RESISTOR 1/4W +/-5% 10 OHM
A6121005511		RESISTOR 1W +/- 5% 10 OHM
A6121013511	NTA950208	RESISTOR 1/4W +/-5% 100 OHM
A6121023511	NTA950208	RESISTOR 1/4W +/-5% 1K OHM
A6121024511	NTA950208	RESISTOR 1/2W +/-5% 1K OHM
A6121033511	NTA950208	RESISTOR 1/4W +/-5% 10K OHM
A6121043511	NTA950208	RESISTOR 1/4W +/-5% 100K OHM
A6121053511		RESISTOR 1/4W +/-5% 1M OHM
A6121223511	NTA950208	RESISTOR 1/4W +/-5% 1K2 OHM
A6121233511	NTA950208	RESISTOR 1/4W +/-5% 12K OHM
A6121243511	NTA950208	RESISTOR 1/4W +/-5% 120K OHM
A6121513511		RESISTOR 1/4W +/-5% 150 OHM
A6121523511	NTA950208	RESISTOR 1/4W +/-5% 1K5 OHM
A6121533511	NTA950208	RESISTOR 1/4W +/-5% 15K OHM
A6121543511		RESISTOR 1/4W +/-5% 150K OHM
A6122007511		RESISTOR 3W +/-5% 20 OHM
A6122023511	NTA950208	RESISTOR 1/4W +/-5% 2K OHM
A6122203511	NTA950208	RESISTOR 1/4W +/-5% 22 OHM
A6122213511		RESISTOR 1/4W +/-5% 220 OHM
A6122223511	NTA950208	RESISTOR 1/4W +/-5% 2K2 OHM
A6122233511	NTA950208	RESISTOR 1/4W +/-5% 22K OHM
A6122243511	NTA950208	RESISTOR 1/4W +/-5% 220K OHM

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A6122294511		RESISTOR 1/2W +/-5% 2.2 OHM
A6122433511	NTA950208	RESISTOR 1/4W +/-5% 24K OHM
A6122723511	NTA950208	RESISTOR 1/4W +/-5% 2K7 OHM
A6122733511	NTA950208	RESISTOR 1/4W +/-5% 27K OHM
A6122743511		RESISTOR 1/4W +/-5% 270K OHM
A6123033511	NTA950208	RESISTOR 1/4W +/-5% 30K OHM
A6123313511		RESISTOR 1/4W +/-5% 330 OHM
A6123323511	NTA940387	RESISTOR 1/4W +/-5% 3K3 OHM
A6123333511	NTA950208	RESISTOR 1/4W +/-5% 33K OHM
A6123923511	NTA950208	RESISTOR 1/4W +/-5% 3K9 OHM
A6123933511		RESISTOR 1/4W +/-5% 39K OHM
A6124723511	NTA950208	RESISTOR 1/4W +/-5% 4K7 OHM
A6124733511	NTA950208	RESISTOR 1/4W +/-5% 47K OHM
A6124743511		RESISTOR 1/4W +/-5% 470K OHM
A6125623511	NTA950208	RESISTOR 1/4W +/-5% 5K6 OHM
A6125633511		RESISTOR 1/4W +/-5% 56K OHM
A6128223511	NTA950208	RESISTOR 1/4W +/-5% 8K2 OHM
A6128233511		RESISTOR 1/4W +/-5% 82K OHM
A6211016621		CERAMIC CAP. +/-10% 100PF 50V
A6211026821		CERAMIC CAP. +80/-20% 0.001uF 50V
A6211036821		CERAMIC CAP. +80/-20% 0.01uF 50V
A6211526821		CERAMIC CAP. +80/-20% 0.0015uF 50V
A6212016621		CERAMIC CAP. +/-10% 200PF 50V
A6212036821	NTA940387	CERAMIC CAP. +80/-20% 0.02uF 50V
A6212506921	NTA930201	CERAMIC CAP. +/-1PF 25PF 50V
A6213006621		CERAMIC CAP. +/-10% 30PF 50V
A6214716621	NTA950208	CERAMIC CAP. +/-10% 470PF 50V
A6214726821	NTA940376	CERAMIC CAP. +80/-20% 0.0047uF 50V
A6214736821		CERAMIC CAP. +80/-20% 0.047uF 50V
A6215016621		CERAMIC CAP. +/-10% 500PF 50V
A6215090S01		CERAMIC CAP. NPO 5PF 50V
A6217090S01	A910314	CERAMIC CAP. NPO 7PF
A6221043721	NTA940371	ELECT. CAP. +/-20% 0.1uF 16V
A6221053721		ELECT. CAP. +/-20% 1uF 16V
A6221066821		ELECT. CAP. +80/-20% 10uF 50V
A6221073821	NTA950208	ELECT. CAP. +80/-20% 100uF 16V
A6221074821		ELECT. CAP. +80/-20% 100uF 25V
A6221083841		ELECT. CAP. +80/-20% 1000uF 16V UL APPR.
A6221084841		ELECT. CAP. +80/-20% 1000uF 25V UL APPR.
A6222243721	NTA950208	ELECT. CAP. +/-20% 0.22uF 16V
A6222253721	NTA940387	ELECT. CAP. +/-20% 2.2uF 16V
A6222262821		ELECT. CAP. +80/-20% 22uF 10V
A6222273821		ELECT. CAP. +80/-20% 220uF 16V
A6222286841		ELECT. CAP. +80/-20% 2200uF 50V UL APPR.
A6223353721	NTA950208	ELECT. CAP. +/-20% 3.3uF 16V
A6223362821		ELECT. CAP. +80/-20% 33uF 10V
A6224746721		ELECT. CAP. +/-20% 0.47UF 50V
A6224756721		ELECT. CAP. +/-20% 4.7uF 50V
A6224763821		ELECT. CAP. +80/-20% 47uF 16V

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A6241028621	NTA950208	MYLAR CAP. +/-10% 0.001uF 100V
A6241038621		MYLAR CAP. +/-10% 0.01uF 100V
A6241048621	NTA950208	MYLAR CAP. +/-10% 0.1uF 100V
A6241528621		MYLAR CAP. +/-10% 0.0015uF 100V
A6241548621		MYLAR CAP. +/-10% 0.15uF 100V
A6242238621	NTA950208	MYLAR CAP. +/-10% 0.022uF 100V
A6243328621		MYLAR CAP. +/-10% 0.0033uF 100V
A6243338621		MYLAR CAP. +/-10% 0.033uF 100V
A6244728621		MYLAR CAP. +/-10% 0.0047uF 100V
A6246838621		MYLAR CAP. +/-10% 0.068uF 100V
A6261014651		POLY. CAP. +/-10% 100PF 25V
A6263014651		POLY. CAP. +/-10% 300PF 25V
A64000005	NTA940385	TIN PLATE WIRE OD=0.5mm
A67P20000H	NTA940370	PVC TUBE OD=2mm
A7152E31524E		FUSE 3.15A/250V T3.15 L 250V VDE SEMKO & BSI APPR.5 X 20mm
A995100020		MICA INSULATOR TO-220 PACKAGE
AM028NA0000		SOLDERING PIN (10010-25)
AM063NA0000		FUSE HOLDER Ni-PT
AM14004A0000		10W HEAT SINK
APJ12FA0200		BAR HOLDER (MCP TOOL)

* ASSEMBLY PART NUMBER : A0211002001 DTS PCB ASSEMBLY

A061507A0000		WHITE P.V.C.
A36K1002A72		DTS PCB MK410DDR-02 THK.=1.6mm
A3700EI4507N	NTA950194	LCD DISPLAY EI-4507A NEGATINE TYPE
A38TC40175B		I. C. TC40175BP
A38TC4532BP		I. C. TC4532BP
A38TC9149P0		I. C. TC9149P
A38TC930714		I. C. TC9307AF-014
A39109015C0		TRANSISTOR 9015C (PNP)
A39201815GR		TRANSISTOR 2SC-1815GR (NPN)
A39209014C0	NTA950208	TRANSISTOR 9014C (NPN)
A40201N4148		SWITCH DIODE 1N4148
A4042B5131E		LED RED OD=3mm B5131 PIN-LENGTH=30mm
A41455690		ZENER DIODE 1/2W +/-5% 5V6
A45121013C		CHOKE COIL 100uH
A45121823	NTA950208	CHOKE COIL 1.8mH 6X8-CC182
A46135104B1N	NTA950175	ROTARY VOLUME 100KB OHM L=27mm W/CC SINGLE GA2N PRB1205N-(UPV)-B100K-CC-27KQ (BALANCE)
A46135503A2N	NTA950175	ROTARY VOLUME 50KB OHM L=27mm W/O CC SINGLE GA2N PRB1205W-(UPV)-A50K-27KQ (MIC VOL.)
A4780506500L		TACT SWITCH 5mm TS-065001-150
A4780511020W		TACT SWITCH I.T.-1102VA
A54317502		CRYSTAL 75KHZ DT-381 KD30D
A5724000261	NTA950208	2 PINS WAFER SHS 2.5mm RIGHT ANGLE
A5724000562		5 PINS WAFER JST 2.5mm RIGHT ANGLE
A5733121002		SINGLE SHIELD & JUMPER WIRE HOUSING ASS'Y 10 PINS L=120mm JST 2.5 1533#28 1007#26 (OPEN 5mm)
A5733181A01		JUMPER WIRE HOUSING ASS'Y 11 PINS L=180mm JST 2.51007#26 (OPEN 5mm)

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A5733221200	NTA950197	SINGLE SHIELD WIRE HOUSING ASS'Y 2PINS L=220mm JST2.5 1533#28 (OPEN 5mm)
A5733251500		JUMPER WIRE HOUSING ASS'Y 5 PINS L=250mm JST 2.5 1007#26 (OPEN 5mm)
A5733351302	NTA950197	TWIN SHIELD WIRE HOUSING ASS'Y 3 PINS L=350mm JST2.5 2547#28 (OPEN 5mm)
A5733401304	NTA950197	JUMPER WIRE HOUSING ASS'Y 3PINS L=280mm,400mm,1007 #26 JST2.5 (OPEN 5mm)
A6121013511	NTA950208	RESISTOR 1/4W +/-5% 100 OHM
A6121023511	NTA950208	RESISTOR 1/4W +/-5% 1K OHM
A6121033511	NTA950208	RESISTOR 1/4W +/-5% 10K OHM
A6121053511		RESISTOR 1/4W +/-5% 1M OHM
A6121513511		RESISTOR 1/4W +/-5% 150 OHM
A6122233511		RESISTOR 1/4W +/-5% 22K OHM
A6123313511	NTA950208	RESISTOR 1/4W +/-5% 330 OHM
A6123933511		RESISTOR 1/4W +/-5% 39K OHM
A6124723511	NTA950208	RESISTOR 1/4W +/-5% 4K7 OHM
A6124733511		RESISTOR 1/4W +/-5% 47K OHM
A6128233511		RESISTOR 1/4W +/-5% 82K OHM
A6211806121		CERAMIC CAP. +/-1PF 18PF 50V
A6212036821		CERAMIC CAP. +80/-20% 0.02uF 50V
A6214706621		CERAMIC CAP. +/-10% 47PF 50V
A6221043721		ELECT. CAP. +/-20% 0.1uF 16V
A6221053721		ELECT. CAP. +/-20% 1uF 16V
A6221063721	NTA950208	ELECT. CAP. +/-20% 10uF 16V
A6221073821	NTA950208	ELECT. CAP. +80/-20% 100uF 16V
A6241028621	NTA950208	MYLAR CAP. +/-10% 0.001uF 100V
A6241038621		MYLAR CAP. +/-10% 0.01uF 100V
A6322122024	NTA950208	SINGLE SHIELD WIRE 1533#28 220mm BLACK (OPEN 5mm)JUMPER OPEN =20mm
A64000005	NTA940385	TIN PLATE WIRE OD=0.5mm
A99F050020		INFRARED REMOTE CONTROL RECEIVER MODULE PIC-12043S PIN LENGTH=24mm
A99H100060	NTA950208	LCD LIGHT LAMP DC 12V 0.05A H-46 12005

* ASSEMBLY PART NUMBER : A0211003001 XBS PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A36K1003A72		XBS PCB MK410DDR-03 THK.=1.6mm
A47218PSTBCN		PUSH SWITCH 4P2T SELFLOCK LSP-SFB-C L=17.8mm T=3.2mm W/METAL BRACKET (TONE LUCK)
A5733101200	NTA950208	JUMPER WIRE HOUSING ASS'Y 2 PINS L=100mm JST 2.5mm1007#26 (OPEN 5mm)
A6124723511	NTA950208	RESISTOR 1/4W +/-5% 4K7 OHM
A632412201C		FOUR SHILED WIRE 2854#30 L=240mm BLACK (OPEN 5mm)

* ASSEMBLY PART NUMBER : A0211004001 DECK CONTROL PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A36K1006A72		DECK CONTROL PCB MK410DDR-06 THK.=1.6mm
A39209014C0		TRANSISTOR 9014C (NPN)
A44235191		RF COIL 19 1/2T ID=3mm WIRE=0.5mm ACW
A45121013C	NTA950208	CHOKE COIL 100uH
A46008202B1U		SEMI-FIXED RESIRTOR 085 2K OHM TYPE B HORIZON

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A5733251400		JUMPER WIRE HOUSING ASS'Y 4 PINS L=250mm 1007#26 JST2.5 (OPEN 5mm)
A5733381500		TWIN & SINGLE SHIELD WIRE HOUSING ASS'Y 5 PINS L=380mm JST 2.5 2547#28 1533#28 (OPEN 5mm)
A5733481300		TWIN SHIELD WIRE HOUSING ASS'Y 3 PINS L=480mm JST2.5 2547#28 (OPEN 5mm)
A6121023511		RESISTOR 1/4W +/-5% 1K OHM
A6121043511		RESISTOR 1/4W +/-5% 100K OHM
A6121233511		RESISTOR 1/4W +/-5% 12K OHM
A6121533511	NTA950208	RESISTOR 1/4W +/-5% 15K OHM
A6122223511		RESISTOR 1/4W +/-5% 2K2 OHM
A6122233511		RESISTOR 1/4W +/-5% 22K OHM
A6122294511		RESISTOR 1/2W +/-5% 2.2 OHM
A6124733511		RESISTOR 1/4W +/-5% 47K OHM
A6211036821	NTA950214	CERAMIC CAP. +80/-20% 0.01uF 50V
A6224773841		ELECT. CAP. +80/-20% 470uF 16V UL APPR.
A6310122031		JUMPER WIRE 1007#26 100mm BLACK (OPEN 5mm)
A6312122331		JUMPER WIRE 1007#26 120mm ORANGE (OPEN 5mm)
A6316122331		JUMPER WIRE 1007#26 160mm ORANGE (OPEN 5mm)
A6318122531		JUMPER WIRE 1007#26 180mm GREEN (OPEN 5mm)
A6350022331		JUMPER WIRE 1007#26 50mm ORANGE (OPEN 5mm)
A6390022231	NTA950214	JUMPER WIRE AWG26 90MM RED
A6921221ZSWE		TWIN DECK MECHANISM TN-21ZSW 12V MOTOR AC ERASE E621-L MITSUMI HEAD RP-7442-BS09
AM067NA0000	A940100	SOLDERING LUG (10014)

* ASSEMBLY PART NUMBER : A0211007001 CD CONTROL PCB ASSEMBLY

A36K1007A72		CD CONTROL PCB MK4100DR-07 THK.=1.6mm
A3700EI6008N	NTA950194	LCD DISPLAY EI-6008A NEGATINE TYPE
A38BUC2RRD		I.C. BUC2RRD
A39109015C0		TRANSISTOR 9015C (PNP)
A39209014C0		TRANSISTOR 9014C (NPN)
A40201N4148		SWITCH DIODE 1N4148
A4780506500L		TACT SWITCH 5mm TS-065001-150
A546B4004		4.00M HZ CERAMIC RESONATOR TDK
A5733451200		JUMPER WIRE HOUSING ASS'Y 2 PINS 1007#26 L=450mm JST 2.5mm
A5733501501	NTA950205	JUMPER WIRE HOUSING ASS'Y 5 PINS 1007#26 L=500mm JST2.5(OPEN 5mm)
A5735201B00		JUMPER WIRE HOUSING ASS'Y L=200mm 12 PINS JST 2.0mm 1007#26 (OPEN 5mm)
A5735221600		JUMPER WIRE HOUSING ASS'Y 6 PINS 1095#28 L=220mm JST 2.0mm
A6121023511		RESISTOR 1/4W +/-5% 1K OHM
A6121033511		RESISTOR 1/4W +/-5% 10K OHM
A6123323511	NTA940379	RESISTOR 1/4W +/-5% 3K3 OHM
A6125123511	NTA940396	RESISTOR 1/4W +/-5% 5.1K OHM
A6221056721		ELECT. CAP. +/-20% 1uF 50V
A6223362821		ELECT. CAP. +80/-20% 33uF 10V
A6224762721		ELECT. CAP. +/-20% 47uF 10V

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A64000005	NTA940385	TIN PLATE WIRE OD=0.5mm
A99H100060	A940512	LCD LIGHT LAMP DC 12V 0.05A H-46 12005

* ASSEMBLY PART NUMBER : A0211009001 HEADPHONE PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A36K1009A72	NTA950175	HEADPHONE PCB MK410DDR-09 THK.=1.6mm
A56096405		HEADPHONE JACK ID=6.3mm (STEREO 7 PINS) (HTJ-064-05A/J)
A5733321502		JUMPER WIRE HOUSING ASS'Y 5 PINS L=320mm JST 2.5 1007#22 (OPEN 5mm)
A6124713511		RESISTOR 1/4W +/-5% 470 OHM

* ASSEMBLY PART NUMBER : A0211010001 MICROPHONE PCB ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A36K1008A72	NTA950175	MICROPHONE PCB MK410DDR-08, THK=1.6mm
A56070650		MIC JACK (MONO) 3 PINSID = 6.3mm(MJ065)
A6310122924	A940512	SINGLE SHIELD WIRE 1533#28 100mm WHITE (OPEN 5mm)JUMPER OPEN=20mm
A64000005		TIN PLATE WIRE OD=0.5mm

* ASSEMBLY PART NUMBER : A0315000001 CASING PACKING ASSEMBLY

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
A060611A69A1	A950203	REMOTE CONTROL PLATE W/ARTWORK
A061501A69A1	A950194	CD DISPLAY P.V.C. W/ARTWORK
A061502A0000		COLOUR DISPLAY PVC
A061504A69A1		DTS PLATE W/ARTWORK
A061505A69A1		METER PLATE W/ARTWORK
A061506A0000		DTS COLOUR P.V.C.
A070698044A1	A950183	FITTED PLUG LABEL W/ARTWORK
A0712890000	A950194	BLACK COVER LABEL
A071362069A1	A950201	CAUTION AND SAFETY LABEL W/ARTWORK
A071365069A2	A950215RC	HELPLINE LABEL W/ARTWORK
A071522069A2	A950215RC	SPEAKER BOX BACK LABEL W/ARTWORK
A07N40016D1	A950183	LASER BEAM WARNING LABEL W/ARTWORK
A07N46149A1	A950183	CLASS I LASER LABEL W/ARTWORK
A07N57049A1	A950183	BATTERY COMPARTMENT LABEL W/ARTWORK
A07N58049A1	A950183	LASER CAUTION LABEL W/ARTWORK
A081501A69A1		CARTON ID=625 x 370 x 528.5 mm 2 PLY W/ARTWORK
A081502A0000		FILLER 397 x 367 x 3 mm
A101501069A1		INSTRUCTION MANUAL W/ARTWORK
A101502069A1		WARRANTY CARD W/ARTWORK
A171502A69A1		BACK COVER BOARD W/ARTWORK
A191501A01A2		TOP POLYFOAM W/RECYCLING SYMBOL & GREEN POINT MARKING
A191502A01A2		FRONT BOTTOM POLYFOAM W/RECYCLING SYMBOL & GREEN POINT MARKING
A191503A01A2		BACK BOTTOM POLYFOAM W/RECYCLING SYMBOL & GREEN POINT MARKING
A191504A01A2		SPEAKER BOTTOM POLYFOAM W/RECYCLING SYMBOL & GREENPOINT MARKING
A191505A01A2		SPEAKER TOP POLYFOAM W/RECYCLING SYMBOL & GREEN POINT MARKING
A2015830000E	A950223	SPEAKER BOX 200 x 167 x 406.5mm 5" SPEAKER 8OHM 7-15W D/N: SP0218(R1) #16
AP06017B0000		REMOTE FRONT CABINET - ORIGINAL BLACK

MATERIAL PART NUMBER	E.C.O NUMBER	DESCRIPTION
AP06018B0000		REMOTE BACK CABINET - ORIGINAL BLACK
AP06019A0000		REOMTE BATTERY DOOR - ORIGINAL BLACK
AP15001A69A1		MAIN PANEL W/ARTWORK
AP15002A69A1		CD PANEL W/ARTWORK
AP15003A69A1		CASSETTE DOOR 'L' W/ARTWORK
AP15004A69A1		CASSETTE DOOR 'R' W/ARTWORK
AP15005A69A1		CD DISPLAY LENS W/ARTWORK
AP15006A69A1		CD DOOR W/ARTWORK
AP15008A0000		LEFT CD FUNCTION KNOB
AP15009A0000		RIGHT CD FUNCTION KNOB
AP15010A0000		PAUSE KNOB 'R'
AP15011A0000		STOP & PLAY KNOB
AP15012A0000		REW & FWD KNOB
AP15013A0000		TWIN KNOB
AP15014A0000		RECORD KNOB
AP15015A0000		X-BASS KNOB
AP15016A0000	A950194	DTS LENS
AP15019A0000		VOLUME KNOB
AP15020A69A1		CASSETTE DOOR LENS 'R' W/ARTWORK
AP15021A69A1		CASSETTE DOOR LENS 'L' W/ARTWORK
AP15022A0000		FUNCTION KEY PAD
AP15023A0000		KEY PAD 'A'
AP15024A0000		KEY PAD 'B'
AP15025A0000		TUNING KEY PAD
AP15026A0000		TUNER CONTROL KEY PAD 'A'
AP15027A0000		TUNER CONTROL KEY PAD 'B'
AP15028A0000		POWER KEY PAD
AP15037A0016	A950211	SPEAKER PANEL-METALLIC GREY(16)
AP15038A0000		SPEAKER MASH COVER
APB09EB0000	A950194	LEVEL KNOB (MB TOOL)

10. CD Mechanical Drawing

FIG. 1 DESCRIPTION OF THE COMPONENTS

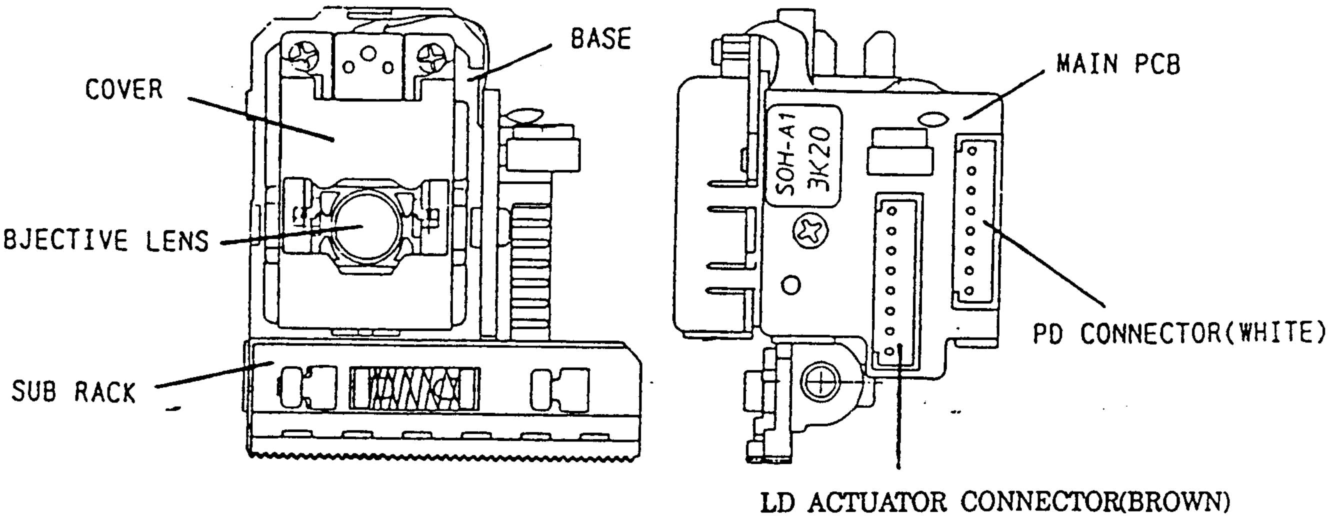

BASE
COVER
BJECTIVE LENS
SUB RACK
MAIN PCB
SOH-A1
3K20
PD CONNECTOR(WHITE)
LD ACTUATOR CONNECTOR(BROWN)

FIG. 1. 1 OPTICAL PICK-UP

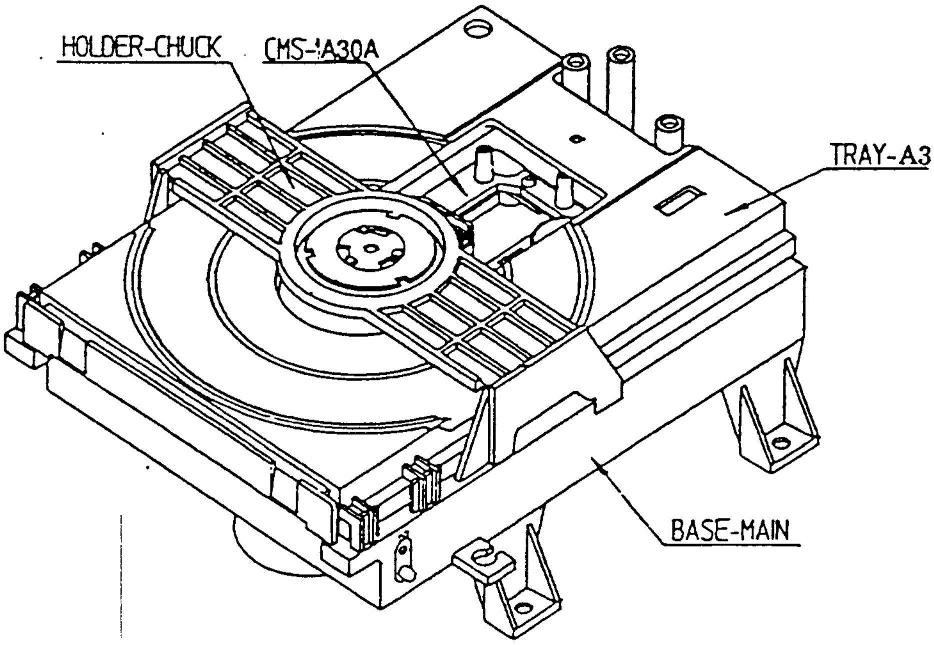
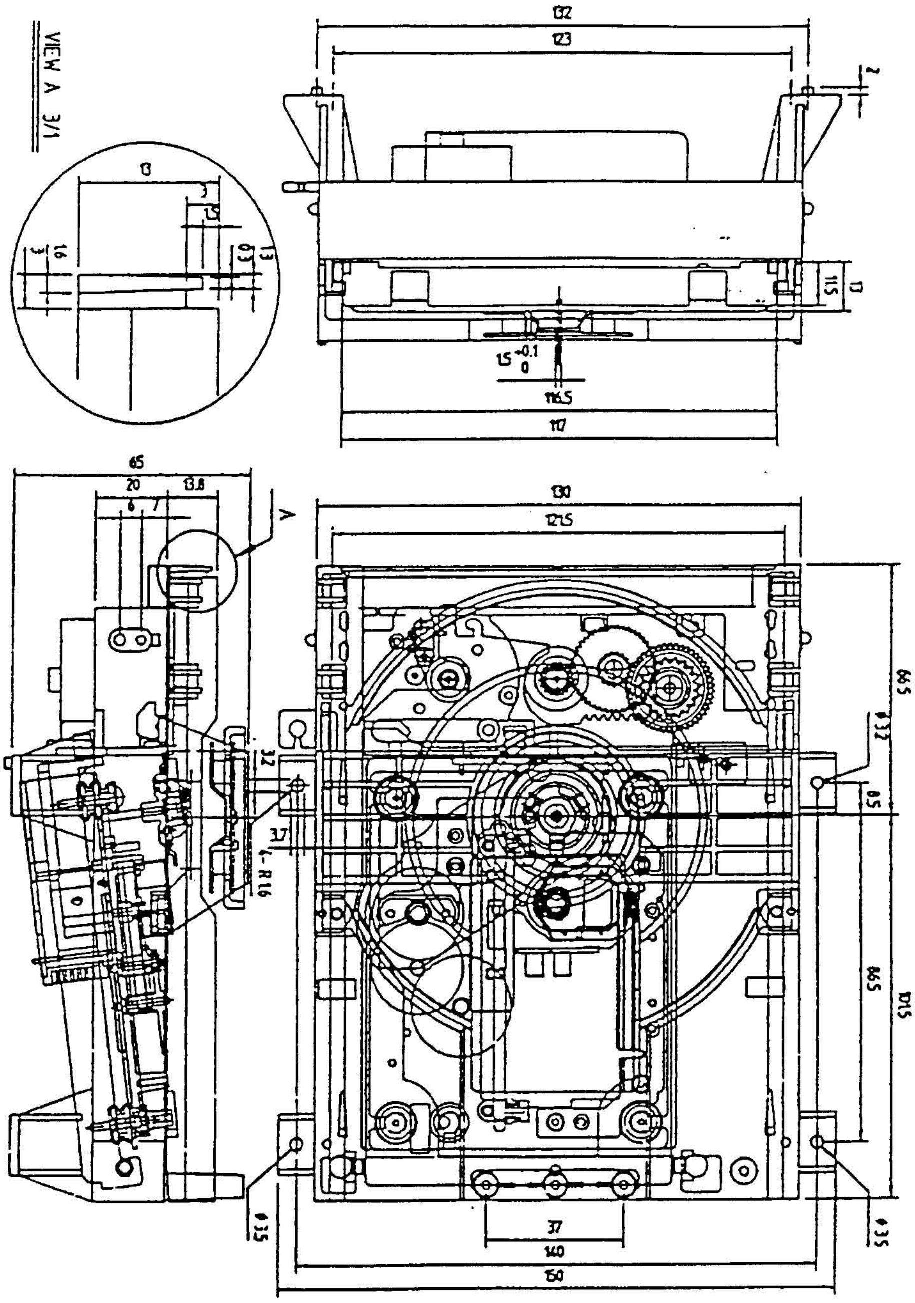

HOLDER-CHUCK
CMS-A30A
TRAY-A3
BASE-MAIN

FIG. 1. 2 MECHANISM

FIG. 2 ASSEMBLY DRAWING

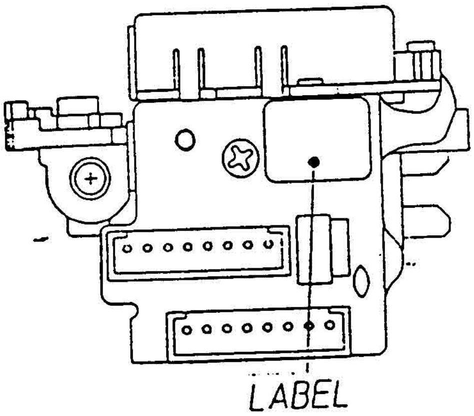

VIEW A 3/1
13
3
1.5
0.3
13
16
3
132
123
2
11.5
17
1.5 +0.1 0
116.5
117
65
20
13.8
6
7
A
130
127.5
66.5
ϕ3.2
8.5
3.2
3.7
4-R1.6
66.5
137.5
ϕ3.5
ϕ3.5
37
140
150

8. 1 OPTICAL PICK-UP

8. 1. 1 LABEL

SOH-A1 (MODEL)
OOOO (LOT NO.) ——— O YEAR (END) O MONTH (A-L) OO DATE

8. 1. 2 POSITION

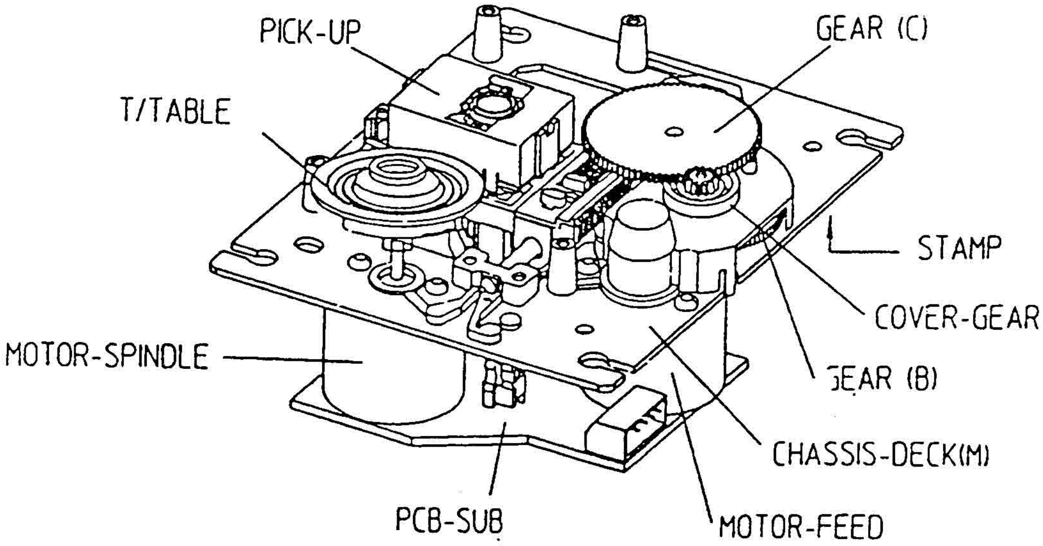


8. 2 DRIVE UNIT

8. 2. 1 LABEL or STAMP

CMS-A30A (MODEL)
OOOO (LOT NO.) ——— O YEAR (END) O MONTH (A-L) OO DATE

8. 2. 2 POSITION

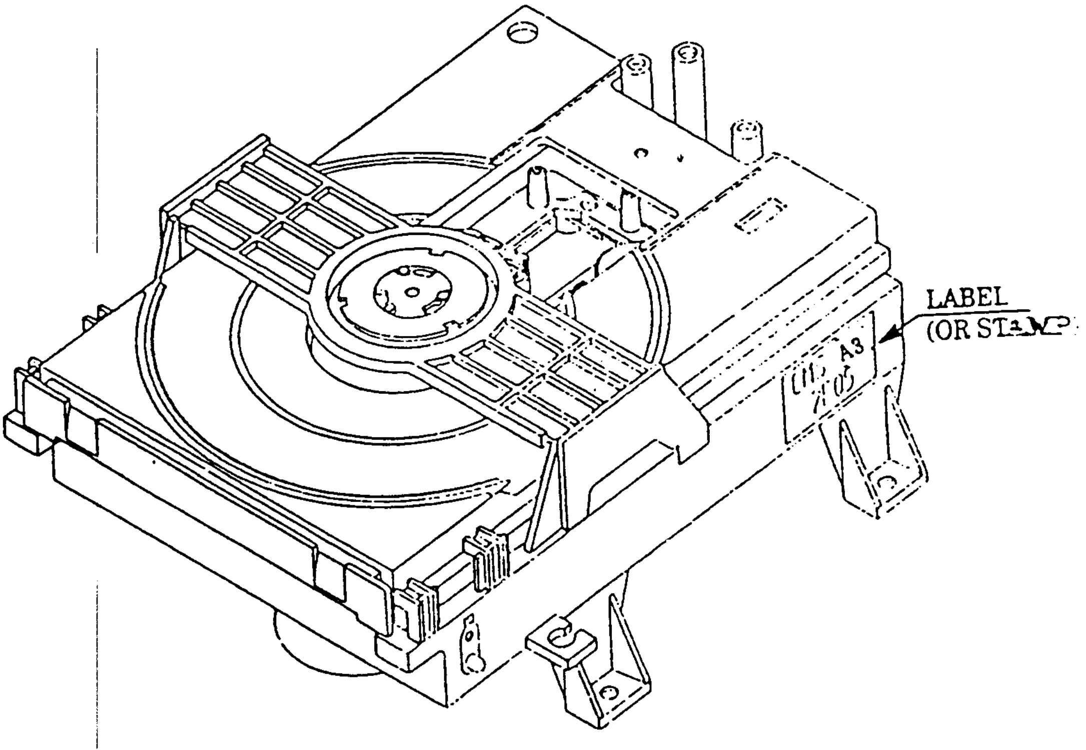

PICK-UP
GEAR (C)
T/TABLE
STAMP
COVER-GEAR
MOTOR-SPINDLE
GEAR (B)
CHASSIS-DECK(M)
PCB-SUB
MOTOR-FEED

8. 3 LOADING UNIT

8. 3. 1 LABEL or STAMP

CMS- A3	(MODEL)				
OOOO	(LOT NO.)	——	O YEAR (END)	O MONTH (A-L)	OO DATE

8. 3. 2 POSITION


LABEL
(OR STAMP)
A3